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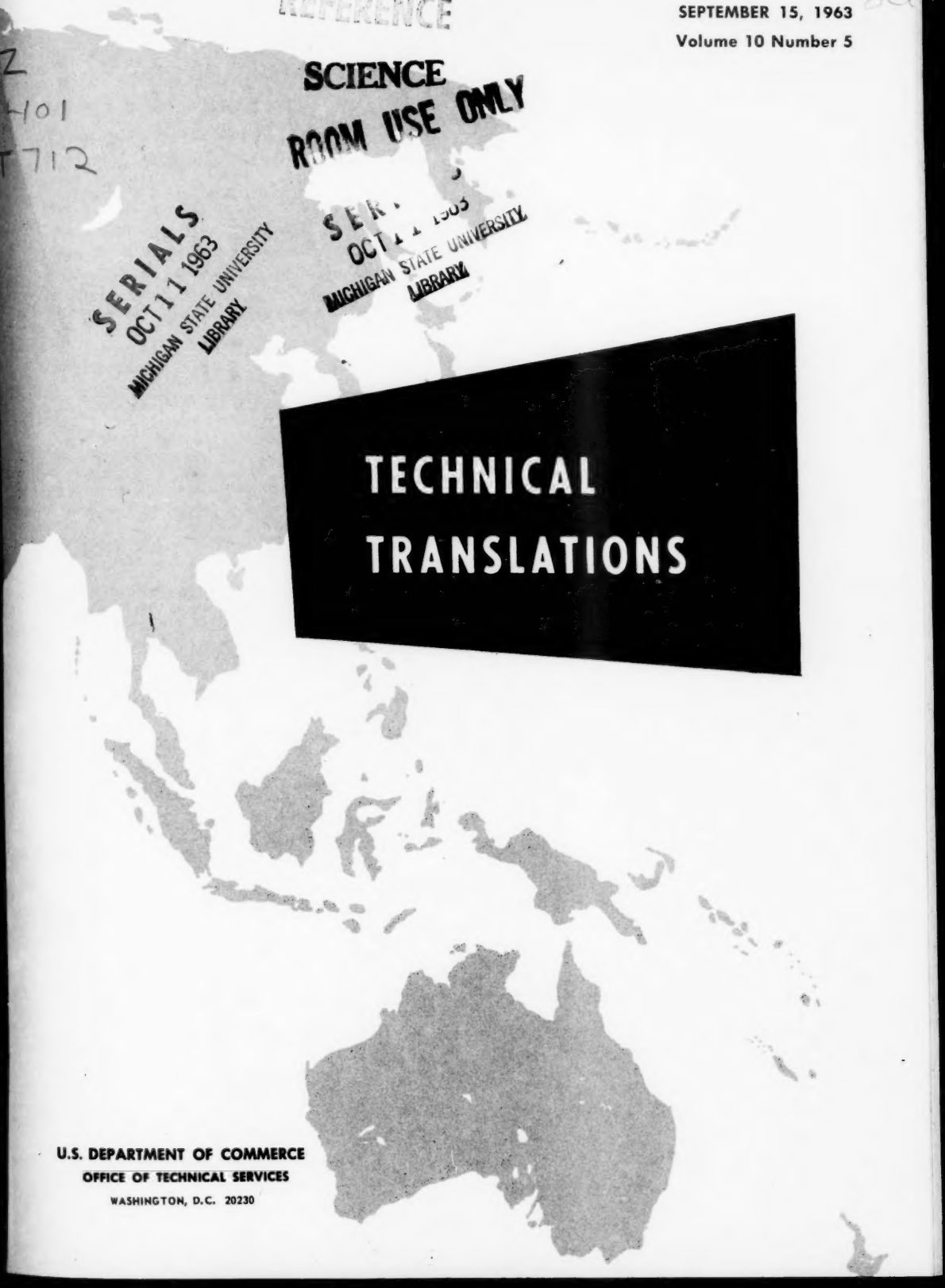
Volume 10 Number 5

TECHNICAL TRANSLATIONS



U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON, D.C. 20230

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

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TECHNICAL TRANSLATIONS

Volume 10, Number 5 Pages 475 - 595 September 15, 1963

*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 217 (GENERAL SERIES). 24 June 63 [11]p. JPRS: 19824.
Order from OTS $0.50 63-31105

Abstract trans. of Magyar Tudomany (Hungary) 1963, v. 8[70] no. 4, p. 233-273, 275-285, 288-297.

DESCRIPTORS: *Abstracts, Bibliographies, Philology, Scientific research, *Medicine, Cybernetics, Scientific personnel, Scientific organizations, Veterinary medicine, *Conferences.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 222 (GENERAL SERIES). 28 June 63, 20p. JPRS: 19923.
Order from OTS $0.75 63-31148

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, Chemistry, Atmospheric pollution, Education, Medicine, Agriculture, Literature. Conferences.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 233: GENERAL SERIES. 3 July 63, 22p. JPRS: 20015.
Order from OTS $0.75 63-31201

Consists of abstracts of articles from the scientific and technical journals of Bulgaria and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Mathematics, Acoustics, Crystals, Astronomy, Meteorology, *Chemistry, *Mechanics, *Biology, *Medicine, *Electronics, Scientific personnel, Nuclear engineering, Aircraft, *Metallurgy.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 236 (GENERAL SERIES). 8 July 63, 15p. JPRS: 20063.
Order from OTS $0.50 63-31228

Abstract trans. of Nauka Polska, 1963, v. 11, no. 2, p. 1-57, 59-93, 95-135, 137-210.

DESCRIPTORS: *Abstracts, Bibliographies, Chemistry, Literature, *Biology, *Scientific personnel, Astronomy, *Conferences Motion pictures, *Scientific organizations.

AGRICULTURE

FROM THE PAGES OF SCIENTIFIC WORKS: REVIEWS. 25 May 61, 3p. 3 refs. Trans. A-1271.
Order from OTS or SLA $1.10 61-23198

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 1, p. 99.

DESCRIPTORS: Reviews, Agriculture, *Irrigation systems, *Automation.

A review of an article from Informatsionnyi Byulleten [Information Bulletin] no. 1, 1960, of Giprovodkhoz MSKH SSSR [State Institute for the Planning of Water Resources, Ministry of Agriculture USSR] by M. Z. Gankin entitled "Organizational and technical problems of complex automation of irrigation systems"

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 72. 26 June 63 [18]p. JPRS: 19853.
Order from OTS $0.50 63-31108

Trans. of Mashinostroitel' (USSR) 1963, no. 3, p. 10; Nauka i Zhizn' (USSR) 1963 [v. 30] no. 1, p.(?) and 9 selected articles from 1963 issues of 6 Russian newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, *Logistics, Industrial plants, Construction, Steel, *Piston rings, *Vehicle tracks, Corn, Cotton, *Maintenance.

Contents:
DT-75 tractor emerges on the fields, by I. Gol'dshteyn
DT-54 tractor parts supply mismanagement at the Krasnyi Put' plant
Progress on the main tractor assembly building at the Leningrad Kirov plant
New steel piston ring processing and wrapping
Step up of agricultural machine and spare parts production in the L'vov area
Release of the universal deep plow tractor by the Lipetsk plant
Production of crawl tractor tracks at the Nikopol' machine building plant imeni lenin, by A. Korniyenko
New agricultural machines from Liyepaysel'mash, by V. I. Nikolayenkov
Production of Khersonets-3 corn combines
Production of the 15,000th khvs-1.2 cotton picker
Agricultural machine repair troubles in North Ossetinian ASSR, by Kh. Gagkaev and V. Yambaev.

Chusid, S. D.
THE GRAIN DISINTEGRATION PROCESS PTS. 1-3. 16 Feb 60, 13p.
Order from SLA $1.60 63-14864

Trans. of die Getreidemühle (East Germany) 1957, [v. 1] no. 7, p. 146-149.

DESCRIPTORS: *Wheat, *Cereals, Structural properties, Mechanical properties, Measurement, *Rolling mills.

Contents:
General
The structural mechanical properties of wheat grain
Influence of the main measurement of the rollers.

Chusid, S. D.
THE GRAIN DISINTEGRATION PROCESS PT. 4: THE KINETIC OF THE GRAIN DISINTEGRATION. [1963] 11p.
Order from SLA $1.60 63-14863

Trans. of die Getreidemühle (East Germany) 1957, [v. 1] no. 8, p. 170-173.

DESCRIPTORS: *Cereals, *Wheat, *Rolling mills, Dynamics, Surface properties.

The results of this research work permits the determination of optimal kinetic perameters for the rollers, the advance calculation of the required disintegration degree for each system, and the sizes of the capacity required for the drive of the rollers. Since the characteristics, concerning the corrugation were determined not only for standard wheat with 56% glassiness in the diversest break systems and disintegrations, a possibility is furthermore given to develop a new diagram technique, which procures optimal condition for flour, ash and bread yield, with decreased machine initiation in the mill industry. (Author)
(See also 63-14864)

Koenig, Walter.
STATIC LOADING OF THE TRACTOR BY MEANS OF FRONT LOADER (Statische Beanspruchung des Ackerschleppers durch Frontlader). [1963] [31]p. (foreign text included) 1 ref.
Order from SLA $3.60 63-14400

Trans. of Grundlagen der Landtechnik (West Germany) 1962, v. 14, p. 51-57.

DESCRIPTORS: *Tractors, Handling, Statics, *Hoists, Loading (Mechanics), *Agricultural machinery.

Koval'skii, V. V.
BIOCHEMICAL PROVINCES AND THE ENDEMICS OF FARM ANIMALS. 6 Aug 62 [11]p. NIH no. 8-4-62.
Order from OTS or SLA $1.60 62-32502

Trans. of Vestnik Sel'skokhoz[yaistvennoi] Nauki (USSR) 1958, v. 3, no. 9, p. 50-58.

DESCRIPTORS: Biochemistry, Geology, *Animals, Plants (Botany), Geochemistry, *Soils, Microanalysis, Minerals, *Rare earth elements, *Deficiency diseases.

For 15 years a group of scientists has been studying the changes in metabolism taking place in plant and animal organism as a result of the shortage or excess of certain chemical elements in various parts of the Soviet Union, which they call 'biogeochemical provinces. The article contains a short characterization of the provinces' studied. It is indicated that the soils of the non-chernozem zone of the Soviet Union are poor in copper, cobalt and iodine. This fact influences the content of microelements in fodder plants, and therefore leads to animal diseases caused by the shortage of these elements (for instance, avitaminosis B_{12}). At the same time there are many provinces (chernozen zone of the Soviet Union) where the soils are rich in chemical elements. Here the content of vitamin B_{12} in the liver of sheep reaches, for instance, 70-80 per cent. (Author)

Kowalski, W.
MAGNESIUM SULFATE AS A STABILIZER IN THE PROCESS OF AMMONIATION OF SUPERPHOSPHATE. [1963] 6p.
Order from ATS $7.50 ATS-59Q68P

Trans. of Przemysl Chem[iczny] (Poland) 1962, v. [18]41, no. 10, p. 563-565.

DESCRIPTORS: *Magnesium compounds, *Sulfates, Stabilization, *Fertilizers, *Soils, *Phosphates, *Ammonia

Marks, Kurt.
STUDYING THE POSSIBILITIES OF A POWER LIFT CONTROL BY MEANS OF THE DRIVING WHEEL'S SLIP (Studie der Möglichkeiten einer Kraftheberregelung nach dem Triebradschlupf). [1963] [13]p. (foreign text included) 2 refs.
Order from SLA $1.60 63-14399

Trans. of Landtechnische Forschung (West Germany) 1962, v. 12, no. 5, p. 125-128.

DESCRIPTORS: *Agricultural machinery, *Tractors, Control systems, Drives, Friction, Disks, Vehicle wheels, Meters.

Slip meters as transmitters for depth control, operating the differential lock and other purposes are powered best by one front and rear wheel each of the tractor. Electric transmitters require a high speed and have even then a low working capacity, which has to be intensified. Transmitting the measured values by cable is a simple matter. Hydrostatic transmitters have a high working capacity, even when the speed is low. The measured values can be transmitted by means of tubes. Mechanical transmitters as centrifugal transmitters neccessitate a high speed. Friction disc transmitters can be made most simply. They need a low speed, mechanical transmittance, and have a medium-high working capacity. (Author)

Animal Husbandry

THERAPY OF UREMA IN CATTLE. [1963] 2p.
Order from SLA $1.10 63-16283

Partial trans. (table 2 only) from unidentified article, n.p., n.d.

DESCRIPTORS: *Uremia, *Cattle, *Blood disorders, Therapy, Urea, Toxicity, Drugs.

Fukushima, T., Shimomura, K., and Oyama, S.
PATHOLOGICAL ANATOMY OF A FOWL PLAGUE IN KOREA CAUSED BY A FILTERABLE VIRUS (Pathologische Anatomie der durch ein Filtrierbares Virus Verursachten Hühnerseuche in Korea). [1963] 14p. 9 refs.
Order from SLA $1.60 63-14853

Trans. of [Nihon Jui Gakkai Zasshi] (Japan) 1932, v. 9, p. 302-316.

DESCRIPTORS: *Birds, Diseases, Korea, *Viruses, Anatomy, Diagnosis, *Plague.

Ionass, A. A.
DEFLUORIZED PHOSPHATES. [1963] 4p.
Order from OTS or SLA $1.10 63-16246

Trans. of [Priroda (USSR) 1961, v. 50, no. 8, p. 90-91].

DESCRIPTORS: Decomposition, *Fluorides, *Phosphates, Food, Cattle, Animals.

Kotlan, Sandor and Pospech, Laszlo.
COCCIDIOSIS OF DOMESTIC RABBIT: A NEW EIMERIA SPECIES (EIMERIA PIRIFORMIS sp. n (A Hazinyul Coccidiosisanak Ismeretehez. Egy uj Eimeriafaj (Eimeria Piriformis sp. n.) Hazinyulbol). 19 Jan 61, 4p. (figs. omitted) 4 refs.
Order from SLA $1.10 63-10921

Trans. of [Magyar Allatorvosok Lapja] (Hungary) 1934, v. 57, no. 15, p. 215-217.

DESCRIPTORS: *Coccidia, *Rabbits, Diseases, Taxonomy.

Kotlan, Sandor; Mocsy, Janos, and Vajda, Todor.
COCCIDIOSIS OF SHEEP IN CONNECTION WITH A NEW SPECIES (A Juhok Coccidiosisanak Okozoi Egy uj Taj Kapcsan). [1963] 4p. (figs. omitted) 17 refs.
Order from SLA $1.10 63-10922

Trans. of [Magyar Allatorvosok Lapja] (Hungary) 1929, v. 52, no. 23, p. 304-306.

DESCRIPTORS: *Sheep, *Coccidia, Diseases, Taxonomy, *Parasitic infections.

Leynen, E.
THE AVIAN PLAGUE (La Peste Aviaire). [1963] 19p. 34 refs.
Order from SLA $1.60 63-14830

Trans. of mono. International Veterinary Congress (no. 12) New York, 1934. Proc[eedings] pt. 3, p. 132-143.

DESCRIPTORS: *Plague, *Birds, Diseases, *Viruses, Erythrocytes, Infections, Chickens, Diagnosis, Immunity.

Picard, W. K.
PSEUDOBIRD PEST, III. [1963] 21p.
Order from SLA $2.60 63-14829

Trans. of Nederlandsch-Indische Bladen voor Diergeneeskunde [en Dierenteelt] 1932, v. 44, p. 493-520.

DESCRIPTORS: *Birds, Diseases, Ethers, *Vaccines, Immunity, Viruses.

Polyanskii, Yu. I. and Kheisin, E. M.
SOME OBSERVATIONS ON THE DEVELOPMENT OF BABESILLA BOVIS IN THE TICK VECTOR (Nekotorye Nablyudeniya nad Razvitiem Babesiella Bovis v Kleshche-Perenoschike). 14 Feb 62, 9p. (figs. omitted) 29 refs.
Order from OTS or SLA $1.10 63-10933

Trans. of Akad[emiya] Nauk SSSR. Karel'skii Filial [Petrozavodsk]. Trudy, 1959, v. 14, p. 5-13.

DESCRIPTORS: Reproduction, Morphology, *Hemosporidia, *Plasmodium, *Ticks, *Disease vectors, Parasites, Cattle, *Babesiasis.

Reproduction of Babesiella bovis by binary division or schizogony occurs in the tissues of the tick. Stages of sexual reproduction and sporogony were not observed, and it can be assumed that only asexual reproduction takes place in the tick. Forms of B. bovis were found in the developing and laid eggs of infected ticks that were similar to the forms found in the tissues of the adult tick. Characteristics (except for parasitism of the erythrocytes and narrow host specificity) which would place B. bovis with the Haemosporidia or other Sporozoa are absent. (Author)

Plant Cultivation

LIST OF WORKS BY THE STAFF OF THE ALL-UNION SCIENTIFIC RESEARCH INSTITUTE OF PLANT PROTECTION PUB. IN 1953 AND 1954 (Spisok Rabot Sotrudnikov VIZR, Opublikovannykh v 1953 i 1954 GG). 13 Feb 62, 36p. 249 refs.
Trans. A-1325.
Order from OTS or SLA $3.60 62-23298

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Zashchity Rastenii. Trudy (USSR) 1960, v. 14, p. 207-226.

DESCRIPTORS: Scientific research, *Plants (Botany), Bibliographies.

Aberg, Ewert, Knutsson, Gunnar, and Roland, Magnus.
EFFECTS OF TRICHLOR ACETIC ACID ON WEEDS AND CROPS. [1963] 16p. 10 refs.
Order from SLA $1.60 63-14351

Trans. of Växtodling (Sweden) 1952, v. 7, p. 11-24.

DESCRIPTORS: *Chlorine compounds, *Acetic acids, Acetates, Sodium compounds, *Grasses, *Herbicides, Sprays.

Experiments with trichloracetic acid, chloral hydrate and sodium trichloracetate show that the preparations can be used to combat quack grass but not against dicotyledonous weeds. Against a stand of quack grass 100 kilograms per hectare (2.47 acres) must be used, while quack grass in newly plowed or tilled ground can be killed with 50 kg/ha. The best effect of the chemicals is obtained when they are applied during the summer, e.i., before the beginning of September. The chemicals have an after-effect which prevents their use in connection with spring seeding. For the same reason, they cannot, during the summer, be applied on a fallow which is to be sown with winter cereal during the fall. The effect of the chemicals disappears during the winter. When they are applied against quack grass during the summer, they do not usually have a damaging effect on next year's crop, sown in April or May. (Author)

Komosko, N. S.
EFFECTIVENESS OF ORDINARY TRICHOGRAMMA (TRICHOGRAMMA EVANESCENS WEST) IN DESTROYING EGGS OF TURNIP MOTH. [1961] [6]p.
Order from OTS or SLA $1.10 61-23036

Trans. of [Ukrayins'kyi Naukovo-Doslidnyi Instytut Zakhystu Roslyn. Nauchnye Trudy] (USSR) 1959, v. 8, p. 131-136.

DESCRIPTORS: Effectiveness, *Hymenoptera, *Eggs, *Lepidoptera, Pest control, *Insect control, Vegetables, Plants (Botany).

Kontar', V. A.
FORCED SPRAYING OF POISON CHEMICALS (Prinuditel'noe Osazhdenie Yadokhimikatov). 13 May 63, 2p. 1-2500; [JPRS] R-3112-D.
Order from OTS $0.50 63-11637

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1963, v. 8, no. 2, p. 34-35.

DESCRIPTORS: *Aerosols, *Sprays, *Herbicides, Gases, Aircraft, Spray nozzles.

It is suggested that chemicals be sprayed into the air-stream blown from the airplane to the earth. Such a stream can be produced by using a special installation. This consists of a special shaped channel at the mouth of which a small series jet engine is placed. The fuel, oil, and electric power for the engine is drawn from the corresponding systems of the aircraft. The inflowing stream of air and the reactive gases exiting from the engine are directed through a diffusor into a mixing chamber. After sufficient cooling the chemical is introduced into the gas stream through a special apparatus fitted with a vented tank. In this way the dust-gas stream formed is ejected through a nozzle toward the earth. The main possibility of depositing the preparation on the earth with small losses is based on the characteristic of the gas stream movement, during which the so-called "surfaces of tangential explosion" arise. (Author)

Kovda, V. A.
THE SOLONETZ SOILS (Solontsy). 1961, 58p. 59 refs. PL-480 Agr.
Order from OTS $0.75 60-21853

Trans. of mono. Pochvy SSR, v. 1, Moscow, 1939, p. 299-347.

DESCRIPTORS: *Soils, *Soil mechanics, Chlorides, Sulfates, Classification, Distribution, Chemical properties, Physical properties, Chemical analysis.

Topics include: Short summary of the history of the solonetz soils; the concept of the solonetz process and solonetzes; the main types of the solonetz process and solonetz classification; description of the main solonetz types; and, Solonetzes and vegetation.

Lyubarskii, L. N.
THE THICKNESS OF THE RYE BRAN AND THE METHOD OF ITS DETERMINATION. [1963] [12]p. (refs. omitted).
Order from OTS or SLA $1.60 63-16476

Trans. of mono. [Rozh': Biologo-Tekhnologicheskie Svoistva Zerna] (Rye: [Biological and Technological Characteristics of the Grain]) Moscow, 1956, p. 50-56.

DESCRIPTORS: Thickness, *Rye, *Cereals, Determination, Flour, Plants (Botany).

Nerpin, S. V., Globus, A. M., and Mel'nikova, M. K.
THE THERMODYNAMICS AND KINETICS OF SOIL MOISTURE; EXPERIMENTAL TESTING OF THE THEORY WITH RADIOACTIVE TRACERS (Termodinamika i Kinetika Pochvonnoi Vlagi i Eksperimental'naya Proverka Teorii s Primeneniem Radioaktivnykh Metok). [1962] 27p. 12 refs.
Order from OTS or SLA $2.60 AEC-tr-5510

Trans. of Symposium on Radioisotopes in Soil Plant Nutrition Studies, Bombay, 26 Feb-2 Mar 62. Proceedings, p. 135-158. (STI/PUB/55)

DESCRIPTORS: *Thermodynamics, Dynamics, *Soils, *Moisture, *Tracer studies, Capillaries, Liquids, Fluid flow, Chemical properties, Physical properties, Surface tension.

Nevkryta, A. N.
INFLUENCE OF DENSITY OF SOIL ON DEVELOPMENT OF MUSCARDINOSIS IN THE BEET WEEVIL (BOTHYNODERES PUNCTIVENTRIS). [1961] [6]p. 4 refs.
Order from OTS or SLA $1.10 61-23035

Trans. of [Ukrayins'kyi Naukovo-Doslidnyi Instytut Zakhystu Roslyn. Nauchnye Trudy] (USSR) 1959, v. 8, p. 43-49.

DESCRIPTORS: *Soil, Parasites, *Beets, *Coleoptera, *Fungi, Pest control, Density, Insect control.

It is shown that any deviation from the optimum soil density evokes intensified muscardinosis. Apparently, these conditions bring about a transition from a latent to an active symbiotic form of muscardine. The influence of the soil density on the development of muscardinosis may be explained by the disturbance of the gas exchange, in particular by the attenuation of oxidation processes in the insect organism.

Ralski, Eugeniusz and Mikolajewicz, Teresa.
STUDIES ON SUSCEPTIBILITY OF BARLEY VARIETIES TO POWDERY MILDEW (ERYSIPHE GRAMINIS DC f. HORDEI MARCHAL) (Z Badan nad Wrazliwoscia Form Jeczmienia na Maczniaka Wlasciwego (Erysiphe Graminis DC f. Hordei Marchal) tr. by J. Lowinski. 1963 [21]p. 13 refs. PL-480 Agr.
Order from OTS $0.50 61-31271

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1958, v. 2, no. 3, p. 313-332.

DESCRIPTORS: Plants (Botany), *Fungi, Cereals, *Barley, Immunity, Genetics, Ecology.

Rubenchik, L. I.
BACTERIAL FERTILIZERS. [1963] 28p. 91 refs.
Order from OTS or SLA $2.60 63-16125

Trans. of Mikrobiologiya (USSR) 1956, v. 25, no. 2, p. 231-242.

DESCRIPTORS: Bacteria, *Fertilizers, Biosynthesis, *Azotobacteraceae, Soils, Microbiology, Plants (Botany)

Zakharchenko, N. L.
UTILIZING GREEN MUSCARDINE AND LINDANE IN CONTROLLING THE LARVAE OF THE SUGAR-BEET WEEVIL. [1961] [7]p.
Order from OTS or SLA $1.10 61-23714

Trans. of [Ukrayins'kyi Naukovo-Doslidnyi Instytut Zakhystu Roslyn. Nauchnye Trudy] (USSR) 1959, v. 8, p. 50-56.

DESCRIPTORS: *Fungi, *Pest control, Parasites, Insect control, *Beets, *Coleoptera, *Insecticides.

The paper reports the results of a preliminary test of the use of the causative agent, the green muscardine fungus Metarrhizium anisopliae Metsch, and lindane in controlling the larvae of the sugar-beet weevil. Introducing a biological preparation of the two into the soil results in a substantial increase in muscardinosis and a decrease in the sugar-beet weevil population. Examination of the hemolymph disclosed the presence of manifestly pathological changes in the weevil larvae taken from plots where lindane and muscardine had been applied to the soil. The pathogenesis produced in larvae by lindane differs from that produced by external infection by muscardine.

ASTRONOMY

ACTA ASTRONOMICA SINICA, 1959, VOL. 7, NOS. 1-2: TABLE OF CONTENTS AND SELECTED ABSTRACTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, Astronomy 1, on Contract AF 19(604)8505. July 62 [19]p. Emmanuel Coll. Research Language Center rept. no. Astro. 1.
Order from OTS or SLA $1.60 62-33218

Trans. of table of contents and selected abstracts of T'ien Wen Hsüeh Pao (Chinese People's Republic) 1959, v. 7, nos. 1-2.

DESCRIPTORS: *Astronomy, Indexes, *Abstracts, *China, Solar eclipses, Photographic analysis, Variable stars, Rotation, Astronomical observatories, Jupiter, Electrons, Magnetic fields, Solar flares, Spectrographic analysis, Satellites (Artificial), Photometers, Planets.

Slonim, Yu. M.
THE RELATIONSHIP BETWEEN CHROMOSPHERIC FLARES AND PROMINENCES IN ACTIVE REGIONS. [1963] 24p. (figs. omitted) 42 refs.
Order from OTS or SLA $2.60 63-14854

Trans. of #[Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 5, p. 798-812].

DESCRIPTORS: *Astronomy, *Solar flares, *Solar disturbances, Solar corona, Solar spectrum, Astronomical observatories, Sun.

An attempt was made to classify chromospheric flares on the basis of their relationship with prominences. Observations were made, during the period of 1958-1960, using a chromospheric telescope, a spectrohelioscope, and a microphotometer. The most effective method of studying the dynamics of flares was found to be with motion-picture photography. The observations show that flares and prominences frequently go together in the active solar regions. Flares are accompanied by the ejection as well as a slow outflow, of chromospheric material, leading to the formation of prominences. Flares are related with the inflow of streamers, loops and jets of prominences formed in the corona. The character of flare development corresponds to the nature of the accompanying prominences. In the case of the rapid ejection of chromospheric material, the flare is of the short impulse type, while in that of a slow outflow of chromospheric matter, it is of the prolonged emission or burst type; in the case of coronal inflows, it is a prolonged pulsating type flare, which is in good agreement with the delayed and intermittent development of these prominences. Flares characterized by plasma motions (flare-prominences) reproduce the usual forms of spot prominences, in particular, typical loop structures. Additional evidence pointing to a relationship between these two processes is their simmultaneous appearance in non-active regions as well, the abrupt disappearance of extended stationary filament and ejections of matter from undisturbed chromospheric regions are accompanied by the flares.

Voroshilov, V. I., Gordeladze, Sh. G. and others.
CATALOG OF PHOTOGRAPHIC, PHOTOVISUAL, AND PHOTORED MAGNITUDES OF 22,000 STARS: ANNOTATION, INTRODUCTION, AND REFS. 25 Apr 63 [14]p. 30 refs. AID rept. T-63-51. AD-403 862
Order from OTS or SLA $1.60 63-19352

Partial trans. of mono. Katalog Fotograficheskikh, Fotovizual'nykh i Fotokrasnykh Velichin 22,000 Zvezd, Kiev, 1962, 173p.

DESCRIPTORS: *Catalogs, *Stars, *Brightness, Galaxies, Astronomical cameras, Photography, *Photographic analysis, Astronomy.

The Catalog contains the results of determining stellar brightness in three types of light in selected regions of the Milky Way. The Catalog includes nearly all stars brighter than photographic magnitude 13.5. (Author)

Gol'nev, V. Ya., Ikhsanova, V. N. and others.
OBSERVATION OF THE PARTIAL SOLAR ECLIPSE WITH THE LARGE PULKOVO RADIO TELESCOPE ON FEBRUARY 15, 1961 (Nablyudenie Chastnogo Solnechnogo Zatmeniya na Bol'shom Pulkovskom Radioteleskope 15 Fevralya 1961 g.) tr. by P. K. Kazakov. [1963] [10]p. (foreign text included) 3 refs. [CSIRO Trans. no.] 6185.
Order from OTS or SLA $1.10 63-19143

Trans. of Solnechnye Dannye (USSR) 1961, no. 10, p. 58-62.

DESCRIPTORS: *Solar eclipses, *Radio astronomy, Radio equipment, Telescopes, Sunspots, *Extraterrestrial radio waves, Astrophysics.

In the six observations during the eclipse tracings were obtained at two wavelengths simultaneously the onset of a localized region of radio emission associated with the the rising sunspot group no. 49. The first observation, at 10^h40^m, the source was still absent at 3.15 cm, whereas at 8.7 cm its flux was 2.5 per cent of the flux from the Sun. The source was detected at 3.15 cm at 13^h12^m and became distinctly visible at 13^h56^m. On the next day its flux at 3.15 cm was 1.2 per cent, and 7.1 per cent at 8.7 cm.

Krotikov, V. D. and Troitskii, V. S.
ON THE THERMAL CONDUCTIVITY OF LUNAR ROCK FROM THE DATA OF PRECISE MEASUREMENTS OF THE RADIO EMISSION OF THE MOON. [1963] 6p. 12 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R71. When supply is exhausted, order from OTS or SLA $1.10, 63-16549

Trans. of #Astronomicheskii Zhurnal (USSR) 1963, v. 40, no. 1, p. 158-160.

DESCRIPTORS: *Moon, *Extraterrestrial topography, Surface properties, *Thermal conductivity, *Extraterrestrial radio waves, Measurement, Analysis, *Radio astronomy.

Using the results of precision measurements of radio emission of the moon, the result is obtained that the quantity $\gamma = (KoC)^{1/2}$ equals 350 ± 75 on the average for the entire lunar disk. Taking the value, found by us earlier, for the density of lunar rock $\rho \simeq 0.5$ g/cm^3, this gives a value for the coefficient of thermal conductivity $K = (1 \pm 0.5) \cdot 10^{-4}$ cal/cm sec degree, which exceeds the earlier, generally accepted value, corresponding to dust in a vacuum, by almost 50 times. From the value obtained for the thermal conductivity the conclusion is made that the top layer of lunar rock, contrary to the accepted opinion, is not in a dust state, but represents a solid porous substance, possibly somewhat pulverized. (Author)

Parenago, P. P., Kukarkin, B. U., and Florya, N. F.
THE SYSTEM OF GLOBULAR CLUSTERS (Sistema Sharovykh Skoplenii). [1963] [22]p. (figs. tables omitted).
Order from OTS or SLA $2.60 63-14917

Trans. of Moscow [U.] Gos[udarstvennyi] Astr[onomicheskii] Inst[itut]. Trudy (USSR) 1949, v. 16, p. 47-70. Another trans. is available from SLA as RT-3979, 40p.

DESCRIPTORS: *Galaxies, *Stars, Light, Absorption, Classification, Distribution, Optical properties, Photographic analysis, Astrophysics.

A revision of the fundamental astro-statistical data on globular clusters in our galaxy as the basis for determining the true distribution in space of these clusters. The data includes: apparent integrated photographic magnitudes and apparent distance moduli of globular clusters; absolute photographic magnitudes of globular clusters; the determination of the true moduli m_0-M; the diameters of globular clusters and light absorption; the distribution of globular clusters in space.

Severnyi, A. B.
INVESTIGATION OF THE PHYSICAL CONDITIONS IN SOLAR PROTUBERANCES BY THE EMISSION LINES WITH SELF-ABSORPTION (Issledovanie Fizicheskikh Uslovii v Solnechnykh Protuberantsekh po Emissionnym Liniyam s Samopogloshcheniem) tr. by David Kraus. Mar 56 [24]p. 20 refs. AmMetSoc-T-R-84.
Order from OTS or SLA $2.60 63-23113

Rough draft trans. of [Akademiya Nauk SSSR]. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1954, v. 12, p. 33-45.

DESCRIPTORS: *Solar flares, *Solar spectrum, Hydrogen, Helium, Line spectrum, Ionization, Calcium, Electron density, Temperature, *Spectrographic data, Astrophysics, Absorption.

The problem is examined of determining the physical conditions in protuberances on the basis of study of extra-ecliptic spectrograms of emission lines burdened with self-absorption (e.g. lines H_α, H and K, and others). Application of the proposed method to the typical bright protuberance of 19 July 1952 made it possible to find the number of Ca^+ ions in the ground state, the number of hydrogen atoms in the second quantum state, of orthohelium atoms in the 2s state, the electron density, and also to evaluate the state of ionization. The kinetic temperature of the protuberance, found from the contours of lines H_α and H and K proved to be $\sim$14,000°. The possibility of the formation of a large electron temperature during the motions of protuberances is investigated. (Author)

Teifel', V. G.
SPECTROPHOTOMETRY OF THE LUNAR SURFACE. Dissertation Leading Toward a Degree of Physics and Mathematics. 26 Feb 63 [12]p. FTD-TT-63-10; AD-299 624.
Order from OTS or SLA $1.60 63-19506

Unedited rough draft trans. of mono. Spektrofotometriya Poverkhnosti Luny, Leningrad, 1960, p. 3-10.

DESCRIPTORS: *Moon, *Spectrophotometers, Surface properties, Photography, Optical analysis, *Colorimetry, Abstracts, Theses.

This report is devoted to spectrophotometric and spectrocolorimetric investigations of individual relatively small sections and details of the lunar surface. The main purpose of this report is to study the chromatic properties of a possibly greater number of lunar objects, situated in various sections of the lunar disk, and the obtainment of spectral curves of a number of lunar surface sections, as well as a comparison of obtained data with other optical and morphological properties of these objects. This report appears to be an effort of filling in to a certain extent the gaps in optical investigations of the Moon, connected with insufficient amount of data on spectral properties of the lunar surface, within possibility limits of the method of photographic spectrophotometry. (Author)

Zuikov, V. N.
SPECTROPHOTOMETRY OF SOLAR PROMINENCES (Spektrofotometriya Solnechnykh Protuberantsev) tr. by John Miller. Apr 57 [40]p. 47 refs. AmMetSoc-T-R-100.
Order from OTS or SLA $3.60 63-23114

Rough draft trans. of Astronomicheskaya Observatoriya [Pulkovo]. Izvestiya (USSR) 1956 [v. 20, no. 2] (155) p. 22-45.

DESCRIPTORS: *Solar flares, Hydrogen, Helium, Calcium, Electron density, Atoms, Excitation, Temperature, Astronomical data, Measurement, Processing, Spectrophotometers, *Spectrographic data, Astrophysics.

The results are examined of measuring the equivalent width of seven lines of the Balmer series, H and KCa^+, and the series He 5876, 4472 and 4026 lines of the spectra of 30 prominences obtained during the three total solar eclipses of 1941, 1945 and 1952. A description is given of the method of measuring and processing the observational data from which we obtained the densities of hydrogen (in the second quantum state) and calcium atoms, electron density, the excitation temperature of hydrogen and helium and the ratio of the numbers of He^+/H^+ atoms. (Author)

BEHAVIORAL SCIENCES

Personnel and Training

CYBERNETICS IN EDUCATION. 28 June 63, 21p. 1 ref. JPRS: 19944.
Order from OTS $0.75 63-31163

Trans. of Vestnik Vysshei Shkoly (USSR) 1963 [v. 21] no. 1, p. 12-24.

DESCRIPTORS: *Education, *Cybernetics, Programming (Computers), *Teaching machines.

Contents:
Programmed instruction for higher education, by T. I. Rostunov
Cybernetics and the teaching process, by A. M. Doroshkevich
Machines as teaching devices, by Yu. N. Kushelev.

HUNGARIAN CHEMISTS JOURNAL, 1963 [VOL. 18] NO. 2/3: [SELECTED] TRANSLATIONS. 31 May 63, 32p. JPRS: 19498.
Order from OTS $1.00 63-21963

Trans. of Magyar Kemikusok Lapja (Hungary) 1963, v. 18, no. 2/3, p. 53-65.

DESCRIPTORS: *Education, Universities, *Engineering personnel, Chemical industry, *Chemical engineering, Mechanical engineering, *Hungary.

Contents:
Education in chemical engineering at Veszprem Chemical Industry University, by Karoly Polinszky
Revised curriculum of the School of Chemical Engineering of Budapest Technical University, by Gyorgy Varsanyi
Training of mechanical engineers for the chemical industry at the Miskolc Heavy Technical University, by Gyorgy Fabry.

Belikov, V.
PEOPLE OF RARE PROFESSIONS: PILOTS (NAVIGATORS) OF COSMONAUTS. 26 Apr 63 [6]p. FTD-TT-63-419.
Order from OTS or SLA $1.10 63-19656

Unedited rough draft trans. from Izvestiya (USSR) 1963, no. 59, 10 Mar, p. 6.

DESCRIPTORS: Aviation personnel, *Pilots, Navigators, *Astronauts, Liquids, Tests, Weightlessness.

Psychology

Kazhinskii, B.
BIOLOGICAL RADIO COMMUNICATION. 1 Mar 63 [14]p. FTD-TT-62-1876. AD-400 553.
Order from OTS or SLA $1.60 63-19439

Unedited rough draft trans. from Rabochaya Gazeta (USSR) 1962, 13 May, p. 4; 15 May, p. 4; 16 May, p. 4.

DESCRIPTORS: Biology, Radio communication systems, Reasoning, Brain, Information theory, *Parapsychology, Perception.

Kazhinskii, B. B.
BIOLOGICAL RADIO COMMUNICATIONS. 1 Apr 63 [176]p. 87 refs. FTD-TT-62-1923.
Order from OTS or SLA $12.50 63-19639

Unedited rough draft trans. of mono. Biologicheskaya Radiosvyaz', Kiev, 1962, 168p.

DESCRIPTORS: *Bioelectronics, *Radio communication systems, *Animals, Birds, Emotions, Nervous system, *Electricity, *Parapsychology, Perception, Communication theory, *Ear, *Electromagnetic waves, Sound, *Analyzers (Psychology), *Brain, *Reasoning, Nerves, Memory, Scientific personnel, Reaction (Psychology).

Contents:
A clear case of biological radio communication
Among the quadruped and feathered friends of V. L. Durov
"Rays of vision"
The ear: an analyzer of bio-electromagnetic waves of auditory frequency
How matter (brain) thinks
K. E. Tsiolkovskii on telepathy
The friends and enemies abroad.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 192 (BIOLOGY AND MEDICINE SERIES). 5 June 63, 27p. JPRS: 19574.
Order from OTS $0.75 63-21989

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Biochemistry, Zoology, Plants (Botany), Agriculture, Food, Microorganisms, Surgery, Cardiovascular system, Neurology, Medical personnel, Pediatrics, Psychiatry, Drugs.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 198 (BIOLOGY AND MEDICINE SERIES). 5 June 63, 4p. JPRS: 19580.
Order from OTS $0.50 63-21995

Abstract trans. of Orvosi Hetilap (Hungary) 1963, v. 104, no. 14, p. 625-651.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Pharmacology, Diseases, Pathology, Radiation effects, Surgery, Diagnosis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 224 (BIOLOGY AND MEDICINE SERIES). 28 June 63, 14p. JPRS: 19925.
Order from OTS $0.50 63-31150

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Thalidomide, Diseases, Congenital anomalies, Cardiac glycosides, Anticoagulants, Prostate, Surgery, Microorganisms, Immunology, Drugs, *Industrial medicine, Radiation effects.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 229 (BIOLOGY AND MEDICINE SERIES). 1 July 63, 30p. JPRS: 19968.
Order from OTS $1.00 63-31174

Consists of abstracts of articles from selected scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Neurology, *Psychiatry, Psychoanaleptic agents, Surgery, Histological techniques, Blood, Radioprotective agents, Yeasts, Bacteria, Bone marrow, Peroxidase, Chemoreceptors, Alcohols, Estrogens, Contrast media, X rays, Cancer, Transaminases, Electroencephalography, Immunity, Toxicity, *Diseases.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 231 (BIOLOGY AND MEDICINE SERIES). 1 July 63, 43p. JPRS: 19973.
Order from OTS $1.25 63-31178

Consists of abstracts of articles from selected scientific and technical journals of Bulgaria and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Antibiotics, Diseases, Enzymes, Blood, Diagnosis, Wounds and injuries, Biochemistry, Eye, Neurology, Surgery, Military medicine, Poisoning, Skin, *Epidemiology, Space medicine, Neoplasms, *Parasites, *Veterinary medicine, Immunology, Trichomonas, Drugs, Communicable diseases, Birds, Growth, Therapy, *Viruses, *Microorganisms.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 238 (BIOLOGY AND MEDICINE SERIES). 9 July 63, 23p. JPRS: 20080.
Order from OTS $0.75 63-31235

Consists of abstracts of articles from selected scientific and technical journals of Bulgaria and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Surgery, X rays, *Communicable diseases, Psychoanaleptic agents, Steroids, Enzymes, Metabolism, Parasites, *Industrial medicine, Vaccines, Microorganisms, Diagnosis, Artificial respiration, Nutrition, Cancer, Mycobacterium tuberculosis.

AKADEMIYA NAUK SSSR. DOKLADY, 1963, VOL. VOL. 149, NO. 1: SELECTED TRANSLATIONS. 12 July 63, 33p. 86 refs. JPRS: 20153.
Order from OTS $1.00 63-31273

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 1, p. 142-145, 185-188, 194-201, 205-206, 213-216.

DESCRIPTORS: Antigen-antibody reactions, Alcohols, *Dehydration, *Photochemistry, Free radicals, *Mitosis, *Muscle proteins, Synthesis, *Desoxyribonucleic acids, Growth, Cells (Biology), *Radiation effects, *Blood disorders, *Nucleotides, *Ribonucleic acids, *Insects, *Eye, Tissues (Biology), *Regeneration, Amphibians, *Conditioned reflex, Inhibition, Direct current.

Contents:
EPR study of sensitization of the alcohol dehydration photoreaction at 77° K, by V. E. Kholmogorov and others
Nuclear division and DNA synthesis during the course of development of somatic musculature, by L. Zhinkin and L. Andreeva
Incidence of leukosis after single and fractionated irradiation, by S. N. Aleksandrov and K. F. Galkovskaya
Comparative study of the nucleotide composition of microsomal and soluble RNA's of insects, by N. A. Gumilevskaya and I. M. Sisakyan
The effect of tissue extract on the lens-regenerating power of the iris in Rana Ridibunda tadpoles, by I. Korkya
The effect of D-C poles on ultraboundary inhibition, by N. P. Movchan.

JOURNAL OF GENERAL BIOLOGY, 1953, VOL. 14, NO. 6: [SELECTED] TRANSLATIONS. 21 June 63, 23p. 3 refs. JPRS: 19786.
Order from OTS $0.75 63-31090

Trans. of Zhurnal Obshchei Biologii (USSR) 1953, v. 14, no. 6, p. 461-469, 475-476.

DESCRIPTORS: *Biology, *Microscopy, Fluorescence, Mirrors, Spectrum analyzers, Illumination, *Scientific personnel, Social sciences.

Contents:
Use of interference-separation mirrors in fluorescent microscopy, by E. M. Brumberg and T. N. Krylova
The world outlook of K. A. Timiryazev: book review by V. P. Dobrokhalov of mono. Mirovozzrenie K. A. Timiryazeva, 2d ed., by G. V. Platonov
Contents: v. 14.

PROBLEMS OF SPACE BIOLOGY, 1962, VOL. 1. 25 Mar 63 [666]p. 613 refs. FTD-Machine trans-62-78; AD-299 677.
Order from OTS or SLA $28.50 63-19218

Trans. of Problemy Kosmicheskoi Biologii (USSR) 1962, v. 1, p. 1-462.
##An abstract trans. of p. 451-459 is available from OTS or SLA $1.10 as 63-15323, AID-62-200, 19 Dec 62, 4p.

DESCRIPTORS: *Space biology, Space navigation, *Radiobiology, Space probes, Manned spacecraft, *Telemetering, *Exobiology, *Life support, *Closed-cycle ecological systems, Space medicine, *Adaptation (Physiology), Urine, Blood, Animals, *Conditioned reflex, Immunology, Viability, *Algae, *Hemopoietic system, *Mutations, Genes, Drosophilidae, *Chromosomes, *Genetics, Plants (Botany), *Serotonin, Radioactivity, *Pressurized cabins, Air, Regeneration, *Medical equipment, *Space environmental conditions, Amino acids, *Acceleration, *Vibration, *Solar radiation, Cosmic rays, Radiation effects, *Blood circulation, Brain, *Gravity (Artificial), Containers, *Phonocardiography, Blood pressure, *Electrocardiography, *Tissues (Biology), *Hypoxia, *Weightlessness,

Contents:

Preface
Certain problems of the study and mastering of cosmic space, by N. M. Siskyan and others
Problems of cosmic biology, by N. M. Sisakyan and others
Radiobiological problems of cosmic flights, by A. A. Gyurdzhyan
Problems in biologic telemetry, by V. V. Parin and others
Problem in space microbiology and cytology, by N. N. Zhukov-Verezhnikov and others
Possibility of existence and methods of detection of life outside of earth, by A. A. Ymshenetskii
Concerning the question concerning support crew members of space ship with products of animal origin, by K. S. Akhlebininskii and others
Biochemical researches of blood and urine of animals, accomplishing flight in space ships, by A. A. Gyurdzhyan and others
Change of certain morphological and biochemical indices of peripheral blood of animals after flight on rockets, by I. I. Kasyan and others
Results of research of certain indices of peripheral vessels in dogs during and after flight in outer space, by V. V. Yakovlev
Observation of conditioned reflex activity of white rats in distant periods after flight on second space ship satellite, by L. D. Lukyanova
Influence of factors of space flight on immunologic reactivity of an organism, by O. G. Alekseeva and A. P. Volkova
Influence of conditions of space flight in ship-satellite on preservation of viability of chlorella culture, by V. E. Semenenko and M. C. Vladimirova
Change in hematogenic organs of mammals under the influence of flight on the 2nd ship-satellite, by M. A. Arseneva and others
Effect of factors of cosmic flight on frequency of appearance of recessive lethal mutations in X-chromosome drosophila melanogaster, by Ya. L. Glembotskii and others
Appearance of dominant lethal mutations in drosophila melanogaster at during cosmic flight on ship-satellite, by G. P. Parfenov
Influence of factors of cosmic flight on heredity and development in actinomycetes and higher plants, by Ya. L. Glembotskii and others
Influence of conditions of cosmic flight on seeds of Allium Fistulosum (spring onion) and Nigella Damascena (nutmeg flower), by B. N. Sidorov and N. N. Sokolov
Factors of cosmic flight and primary non-disjunction of chromosomes, by N. P. Dubinin and O. L. Kanavets
Influence of factors of cosmic flight on level serotonin in blood of animals, by V. S. Shashkov and others
Determination of induced radioactivity in second satellite space ship, by V. V. Matveev and A. D. Sokolov
Certain results of medico-biologic researches on second and third cosmic ship satellites, by V. V. Antipov and others
Medico-biologic researches on artificial satellites of earth, by O. G. Gazenko and others
Air-tight cabin for animal, by A. M. Bakhramov and V. I. Yazdovskii
Scientific research apparatus, by B. G. Buylov and R. G. Gryuntal
System of air regeneration in pressurized cabin, by A. D. Seryapin
Preparation of animal to experiment, by O. G. Gazenko and V. S. Georgievskii
Sanitary device in pressurized cabin, by O. G. Gazenko and others
Fastening of animal in pressurized cabin, fabric "clothes" and location of data units for registration of physiological functions, by O. G. Gazenko and A. A. Gyurdzhyan
Supplying dogs with food and water in conditions of space flight, by I. S. Balakhovskii and others
Results of investigations on satellite, by I. S. Balakhovskii and others
Amino acid composition of chlorella (Chlorella Pyreuoidosa), by N. M. Sisakyan and others
Influence of general vibration on animal organism, by V. S. Georgievskii and E. M. Yuganov
Influence of long transverse accelerations on organisms of animals, by A. R. Kotovskaya and E. M. Yuganov
Concerning the question of biologic action of cosmic and solar radiation in mountains, by V. I. Danileiko
Concerning a method of investigating cerebral blood circulation in conditions of modified gravitational field, by Yu. E. Moskalenko and others
Containers for certain biologic objects, utilized in experiments on cosmic ships, by I. V. Baranovskaya and A. A. Gyurdzhyan
Support of conditions for prolonged flight of mice on cosmic ship satellite, by I. V. Baranovskaya and A. A. Gyurdzhyan
Methodology "of Integral" Phonocardiography, by R. M. Baevskii
Concerning the technology of registration of sphygmograms of dogs, by R. M. Baevskii and V. I. Polyakov
Registration of seismocardiograms of dogs, by R. M. Baevskii and L. A. Kazaryan
Selection of tracings and analysis of electrocardiograms of dogs, by R. M. Baevskii and M. M. Osipova
Study of biopotentials and the pressure of oxygen in tissues of the brain during hypoxia, by E. A. Kovalenko and V. B. Malkin
Coordination of arbitrary movements of a man in a modified gravitation field, by L. V. Chkhaidze
##Methodology of fastening of electrodes for registration of electrocardiogram during the manner space flights, by N. A. Agadzhanyan and others.

SOVIET BIOMEDICAL MONITORING IN SPACE FLIGHT METHODS, TECHNIQUES, AND EQUIPMENT: COLLECTION OF ABSTRACTS. 27 Mar 63 [41]p. 11 refs. AID rept. P-63-42. AD-402 620
Order from OTS or SLA $4.60 63-19450

DESCRIPTORS: *Space biology, Medicine, *Space medicine, *Electrocardiography, Electrodes, Medical equipment, Physiology, Astronauts, Medical examination, Brain, Measurement, *Blood circulation, Seismographs, Cardiovascular system, Dogs, Mice, *Pulse analyzers, *Closed-cycle ecological systems, *Containers, Animals, Life support.

Contents:

Foreword
Introduction
Methods and techniques of biomedical monitoring
Method of fixing EKG electrodes
Devices for attachment of biosensors
Physiological responses of cosmonauts in flight
Results of postflight medical examination of Titov

Method of measuring intracranial circulation
Registration of "seismocardiograms" in dogs
"Integrated" phonocardiography
Registration of sphygmograms in dogs
Life support system for mice
Containers for bioobjects in space flight.

SOVIET LITERATURE ON LIFE SUPPORT SYSTEMS. A. BIOSCIENCES. Rept. no. 13. 29 Mar 63 [20]p. 8 refs. AID rept. P-63-45; AD-402 263.
Order from OTS or SLA $1.60 63-19445

DESCRIPTORS: *Life support, *Closed-cycle ecological systems, Space biology, *Space medicine, Physiology, *Ecology, Spacecraft, Biochemistry.

Contents:
Pt. A (Biosciences)
I. Space medicine and biology
II. Space physiology
V. Space vehicle ecology.

STUDIES IN BIOLOGY. 28 June 63, 37p. 33 refs. JPRS: 19937.
Order from OTS $1.00 63-31160

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1963, v. [38] (68) no. 1, p. 52-62, 133-137.

DESCRIPTORS: *Biology, *Crustacea, *Mutations, *Adaptation (Physiology), Ecology, Morphology, *Radioactive isotopes, *Strontium, *Decontamination, Water, Algae, Marine biology.

Contents:
Cyclomorphosis in Cladocera as species adaptive sign, by E. F. Manuylova
Concerning the accumulation of radiostrontium by hydrophytes and detritus, by A. L. Agre and M. M. Telitchenko.

UZBEK BIOLOGICAL JOURNAL, 1963, VOL. 7, NO. 2: [SELECTED] ARTICLES. 10 July 63, 42p. 55 refs. JPRS: 20104.
Order from OTS $1.25 63-31247

Trans. of Uzbekskii Biologicheskii Zhurnal (USSR) 1963, v. 7, no. 2, p. 5-9, 11-15, 21-36, 66-69.

DESCRIPTORS: *Biology, Metabolism Temperature, *Sodium compounds, *Chlorides, *Water, Chemical analysis, *Stomach, Secretions, *Nutrition, *Blood, *Skin, *Muscles, Solar radiation, *Bile, Liver.

Contents:
Characteristics of water-salt metabolism and its regulation under conditions of high temperature, by A. Yu. Yunusov
Effect of the repeated action of high temperature on water-salt metabolism, by A. Yu. Yunusov and A. T. Tursunov
Change in the mineral composition of the gastric juice during qualitatively different nutrition under conditions of optimum temperature, by E. S. Belova
Change in the composition and properties of the blood during quantitatively different nutrition under high temperature conditions, by M. V. Abdusamatova
Participation of the skin and muscles in mineral metabolism during water and salt excesses under conditions of solar irradiation, by M. G. Mirzakarimova and T. A. Vashchenko
Bile-eliminating function of the liver under high temperature conditions, by Z. A. Iskhakov

Mikhailovskii, G. P.
CERTAIN RESULTS OF THE DEVELOPMENT OF SPACE BIOLOGY. 25 Apr 63 [9]p. FTD-TT-63-358.
Order from OTS or SLA $1.10 63-19648

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32, no. 12] p. 105-108.

DESCRIPTORS: *Space biology, Space flight, Space medicine, Safety, Radiation effects, Closed-cycle ecological systems, Ear, Exobiology.

Summaries are given of papers presented at the second session on the problems of space biology organized by the Academy of Sciences of the USSR.

Nitsenko, A. A.
ON THE PROBLEM OF THE BOUNDARIES OF NATURAL PLANT ASSOCIATIONS (K Voprosu o Granitsakh Rastitel'nykh Assotsiatsii v Prirode) tr. by V. A. Solodukhin. [1962] [21]p. (foreign text included) 15 refs. [CSIRO] Trans. no. 5940.
Order from OTS or SLA $2.60 63-13599

Trans. of Botanicheskii Zhurnal (USSR) 1948, v. 33, no. 5, p. 487-495.
Another trans. is available from OTS $0.50 as 60-21901, 12p.

DESCRIPTORS: *Plants (Botany), Ecology, Growth.

Pavlenko, S. M.
CERTAIN PROBLEMS OF SOVIET MEDICINE. 24 May 63, 11p. JPRS: 19375.
Order from OTS $0.50 63-21905

Trans. of [Klinicheskaya] Meditsina (USSR) 1963, v. 41, no. 3, p. 3-10.

DESCRIPTORS: *Medicine.

Zarenkov, N. A. [Wu, Wang-lieu; Nguen, Tien-k'an].
GENERAL CHARACTERISTICS OF PLANKTON AND BENTHOS DISTRIBUTION IN THE GULF OF TONKIN AND IN ADJOINING AREAS OF THE SOUTH CHINA SEA. 29 May 63, 5p. 3 refs. JPRS: 19485.
Order from OTS $0.50 63-21953

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 6, p. 1389-1391.

DESCRIPTORS: *Plankton, *Benthos, Distribution, South China Sea, Taxonomy, *Marine biology.

It is shown that the concentrations of plankton in the northern part of the gulf are preserved throughout the year. This phenomena may be associated with the effect of the coastal drainage and the nature of the circulation of the waters (merger zone). The concentrations of plankton in the southwestern part of the gulf is observed only during July-August. It is associated exclusively with the zone of rising internal waters. The problem regarding the dependence of the quantitative distribution of plankton and benthos is not clear, but the distribution of benthos does not depend on plankton. It is clear that within the boundaries of the southwestern summer concentration of plankton there is no perceptible increase in benthos biomass. The dependence of the benthos biomass distribution on coastal drainage appears to be quite clear -- maximum biomass is observed in the northern half of the bay where the coastal drainage is most pronounced. (Author)

Anatomy and Physiology

Arkad'evskii, A. A.
COMBINED EFFECT OF VIBRATION AND NOISE ON THE HUMAN ORGANISM 22 Apr 63 [8]p. 6 refs. FTD-TT-63-292.
Order from OTS or SLA $1.10 63-19647

Unedited rough draft trans. of Gigiena i Sanitariya (USSR) 1962 [v. 27] no. 10, p. 25-28.

DESCRIPTORS: *Vibration, *Noise, Body, High frequency, Brain, Spinal cord, Hearing, Physiology.

It is shown that individual effect of noise of medium frequency spectrum with an intensity of 85 db and general vibration of a frequency of 50 c and amplitude of 15 μ causes no expressed displacement in physiological reactions. Combined effect of these factors of very same parameters intensify the physiological displacement of the investigated functions, but this displacement does not go beyond the limits of normal organismal adaptation. (Author)

Finkel'shtein, M. O.
VEINS OF THE MUCOSA OF THE HUMAN TONGUE. [1963] [8]p. 5 refs. FASEB manuscript no. S 124-2.
Order from OTS or SLA $1.10 63-19372

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 42, no. 3, p. 108-114.

DESCRIPTORS: *Veins, *Membranes (Biology), *Mucus, *Tongue, Man.

Fudel'-Osipova, S. I.
AGE CHANGES IN THE EXCITABILITY AND FUNCTIONAL MOBILITY OF THE NEUROMUSCULAR APPARATUS OF WARM-BLOODED ANIMALS. [1963] [14]p. 18 refs. FASEB manuscript no. S 280-2.
Order from OTS or SLA $1.60 63-19393

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 9, p. 1099-1104.

DESCRIPTORS: *Aging (Physiology), Excitation, *Neuromuscular transmission, Physiology, *Animals, Stimulation.

Gruzova, M. N.
THE FORMATION OF THE KARYOSPHERE IN THE OOGENESIS OF PANORPA. [1962] [48]p. 23 refs. FASEB manuscript no. S 225-2.
Order from OTS or SLA $4.60 63-19007
Figs. available on loan from OTS

Trans. of Tsitologiya (USSR) 1962, v. 4, no. 2, p. 150-159.

DESCRIPTORS: *Mitosis, Cells (Biology), *Chromosomes, Morphology, Ribonucleic acids, *Insects.

The behavior of the nuclear structures in the oogenesis of two species of Panorpa was observed, beginning with the stage of prophase of miosis up to anaphase of the first reduction division. The chromosomes begin to be collected in a karyosphere shortly after the diplotene stage, when the oocyte enters into the period of great growth. In the period of vitellogenesis, the karyosphere actively participates in the metabolic processes of the cell, which is expressed in the appearance of drops of secretion on the surface of the karyosphere, and also of nucleoli in direct contact with it. In the nucleus in this period there appear numerous nucleolus-like formations which are diverse in morphology, while the nuclear sap is saturated with proteins. In this maximally active period of synthesis of proteins in the oocyte, only traces of DNA are detected in the karyosphere. RNA is manifested in the form of large nucleoli on the surface of the karyosphere. It is then secreted into the karyoplasm. After the completion of the processes of vitellogenesis, there was observed in the nucleus of the oocyte the disappearance of the numerous nucleolus-like structures, and the karyosphere again stained by the Feulgen reaction. These studies and the literature data are considered by the author as evidence that the degree of activity of the karyosphere varies greatly in various species of animals.

Sergievskii, M. V. and Ivanov, Yu. N.
ON THE PROBLEM OF SLEEP (EXPERIMENTS ON ANIMALS DEPRIVED OF THE THREE PAIRS OF DISTANCE RECEPTORS/I.E., VISION, HEARING AND SMELL/). [1963] [32]p. 22 refs. FASEB manuscript no. S 86-3.
Order from OTS or SLA $3.60 63-19356

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 6, p. 646-653.

DESCRIPTORS: *Sleep, Laboratory animals, Sensory mechanisms, *Vision, *Hearing, *Smell, Sensitivity, Reflexes, Respiratory system, Cardiovascular system, *Brain, Morphology, Stimulation, Skin, Bioelectronics, Surgery, Caffeine, Cerebral cortex.

Sheveleva, V. S.
EVOLUTION OF THE FUNCTION OF SYMPATHETIC GANGLIA IN ONTOGENESIS. [1963] [24]p. 26 refs. FASEB manuscript no. S 277-2.
Order from OTS or SLA $2.60 63-19392

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 9, p. 1051-1063.

DESCRIPTORS: *Evolution, *Autonomic nervous system, *Ganglia, Rabbits, Growth, Bioelectronics, Brain, Spinal cord, Cells (Biology), Biochemistry, Acetylcholines.

An investigation was conducted on the character of the "spontaneous" and reflex electrical activity of the sympathetic ganglia during ontogenesis, with emphasas on the details of the interneuronal transmission of excitation in their synapses. The changes in the electrical activity of the sympathetic ganglia were evaluated in a series of experiments and compared with the changes in the electrical activity of different parts of the central nervous system in ontogenesis. (Author)

Snyakin, P. G. and Esakov, A. I.
PROBLEMS OF PERCEPTION AND THE PHENOMENON OF 'ATTUNEMENT' OF THE SENSE ORGANS. 20 June 63, 12p. JPRS: 19762.
Order from OTS $0.50 63-31080

Trans. of Voprosy Filosofii (USSR) 1963 [v. 17] no. 2, p. 61-69.

DESCRIPTORS: *Perception, Thresholds (Physiology) *Sensory mechanisms, *Sense organs, Acuity, Adaptation (Physiology)

Biochemistry

BIOCHEMISTRY OF FRUITS AND VEGETABLES, 1961, VOL. 6: SELECTED ARTICLES. 1963, 59p. 121 refs. PL-480 Agr.
Order from OTS $0.75 63-11084

Trans. of Biokhimiya Plodov i Ovoshchei (USSR) 1961, v. 6, p. 77-95; 175-207; 219-227; 252-261.

DESCRIPTORS: Plants (Botany), Biochemistry, *Fruits, *Vegetables, *Phenols, *Algae, Carbohydrates, Metabolism, *Apples, Agriculture, *Fertilizers, Potassium compounds, Nutrition, *Onions, Enzymes, *Fungi.

Contents:
The role of phenolic compounds in the resistance of cabbage to Botrytis cinerea, by B. A. Rubin and others
Variability of biochemical characteristics of fruit and berries, by E. V. Sapozhnikova and S. M. Fatalieva
Some biochemical features of indigenous and exotic varieties of Kartli apples in the Georgian S.S.R., by G. A. Makashvili
Biochemical composition of walnut kernels in the Ukraine, by L. K. Polishchuk
Agrophysiological aspects of potassium nutrition of onion plants cultivated for onion bulbs, by A. Ya. Kal'tya
The enzymatic apparatus of Phytophthora infestans, by B. A. Rubin and V. A. Aksenova.

PHYSIOLOGY AND BIOCHEMISTRY OF AGING (Problemy Vozrastnoi Fiziologii i Biokhimii) tr. by Michael Artman. 1963, 308p. 731 refs. PL-480 HEW.
Order from OTS $3.00 63-11067

Trans. of Kharkov U. Nauchno-Issledovatel'skii Institut Biologii. Trudy (USSR) 1960, v. 29 [321p.] (Kharkov U. Ucheni Zapysky (USSR) 1960, v. 108).

DESCRIPTORS: *Age, Physiology, *Proteins, Synthesis, *Serum albumin, Animals, Enzymes, *Muscle proteins, *Amino acids, *Liver, Nucleoproteins, *Phosphorus compounds, Lipoproteins, Tissues (Biology), *Adenosine phosphates, *Nucleic acids, *Growth substances, Diet, Rats, *Surgery, *Hormones, Regeneration, Metabolism, *Thyroxine, Blood, *Corticosteroid agents, Nerves, Oxidation, *Pituitary harmones, *Embryos, Birds.

Contents:
Changes in protein synthesis with age, pts. 1-2, by I. N. Bulankin and E. V. Parina
Studies on the amount and properties of serum albumin in animals of various ages, by V. M. Kornienko
Enzymatic cleavage of serum albumin from animals of various ages, by V. M. Kornienko and others
Certain properties of the myosin of young and old white rats, by V. M. Kornienko and A. A. Martynenko
Sulfur-containing amino acids in liver and muscle proteins in white rats of various ages, by V. N. Nikitin and others
Turnover rate of muscle and liver proteins during ontogenesis, by O. P. Silin
Nucleoprotein content of the liver in animals of various ages, by N. A. Shabanova
Changes with age in the tissue phosphorus fractions and the phosphorus fractions of "structural proteins" (liponucleoprotein complexes extractable with Edsall's reagent) in the heart, kidneys and intestines of white rats, by V. N. Nikitin and others
Biochemical studies on the age-dependent decrease in protein synthesis in the animal organism. II. Stimulation of protein synthesis in liver homogenates by adenosine triphosphate (ATP) and its changes during ontogenesis, by V. N. Nikitin and R. I. Golubitskaya
Age-dependent characteristics of the effect of injected ATP on nucleic acids in livers of white rats, by V. N. Nikitin and R. I. Golubitskaya
Growth-retarding diet and its effect on age-dependent changes in the organism, pts. 1-4, by V. N. Nikitin and others
Cytological studies of livers of young and old rats kept on a proteinless diet followed by feeding on a regular diet and of livers during regeneration, by N. P. Grebennikova and N. M. Novikova
Change in the composition of liver tissue in old animals kept on a proteinless diet followed by feeding on an adequate diet and during processes of regeneration, by N. N. Novikova
Ontogenetic development of the functional reactivity of denervated liver, by V. N. Nikitin and R. I. Golubitskaya

The effect of hypophysectomy on the growth and biochemical properties of animals of various ages, by V. I. Mukhin

Effect of pituitary growth hormone on nucleic acid metabolism in white rats of various ages, by I. N. Todorov

Effect of thyroxine on tissue phosphorus fractions and on the composition of "structural" proteins in the liver and brain of animals of various ages, by V. N. Nikitin and others

Age-dependent changes in the blood picture under the influence of desoxycorticosterone acetate (DOCA) by Sun Len'-fen'

Age-dependent changes in the blood and bone marrow of white rats under the influence of cortisone, by Sun Len'-fen'

Age-dependent features of Wallerian degeneration in the peripheral nerves of the rat, by G. S. Kozyrev and S. V. Zhukova

The effect of age on oxidative processes in tissues, pts 1-2 by E. A. Sazonova

Effect of age and of the pituitary somatotropic hormone (STH) on the oxidation of fatty acids in livers of white rats, by A. A. Pashkova

Studies on the physiology of embryonic development of poultry, pts 5-7, by V. I. Makhin'ko and others

STUDIES IN BIOCHEMISTRY. 2 July 63, 22p. 54 refs. JPRS: 19995.
Order from OTS $0.75 63-31185

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1963, v. 9, no. 2, p. 154-160, 180-188.

DESCRIPTORS: *Biochemistry, *Liver, Pathology, *Plutonium, *Radiation injuries, *Adenosine phosphates, *Creatine, *Phosphates, *Brain, *Muscles, *Adaptation (Physiology), *Oxidoreductases.

Contents:

The problem of liver pathochemistry after injury with plutonium-239, by N. I. Elkina and Z. B. Tokarskaya

The content of adenosine triphosphoric acid and creatine phosphate in the brains and muscles of animals adapted to the cold, by L. A. Guseva

The effect of imipramine on the activity of monoamine oxidase of the cat brain, by R. A. Khaunina and I. P. Lapin.

Asai, Toshinobu and Aida, Ko.
STUDIES ON THE OXIDATIVE BACTERIA. PT. 4. ON THE PRODUCTION OF ALPHA-KETOGLUTARIC ACID AND PYRUVIC ACIDS BY PSEUDOMONAS AND SERRATIA. [1963] 14p. 22 refs.
Order from SLA $1.60 63-14629

Trans. of [Nihon Nogei-Kagakkai Shi (Japan) 1952, v. 26, p. 528-533].

DESCRIPTORS: *Bacteria, Oxidation, *Metabolism, *Pseudomonas, *Serratia, *Pyruvic acid, *Glutaric acids, *Carbonyl radicals, Chemical reactions, Culture media, Paper chromatography.

By shaking culture, a confirmation was made that Pseudomonas 33F produced α-ketoglutaric acid and that Serratia marcescens No. 18 also produced this acid via 2-ketogluconic acid. From 7.64% glucose solution containing 0.1% ammonium sulphate and other mineral salts, Pseudomonas 33F and Serratia marcescens No. 18 produced 1384 mg. and 1899 mg of α-ketoglutaric acid per 100 cc. of culture fluid, respectively. The identification of α-ketoglutaric acid was conducted as its Ca-salt, 2,4-dinitrophenylhydrazone and by the paper chromatographic method. The crystal of free acid was also acquired. (Author)

Colobert, L. and Dirheimer, G.
ACTION OF LYSOZYME ON A GLYCOPEPTIDIC SUBSTRATE ISOLATED FROM MICROCOCCUS LYSODEIKTICUS (Action du Lysozyme sur un Subtrat Glycopeptidique Isole de Micrococcus Lysodeikticus). Jan 63, 20p. 54 refs.
Order from SLA $1.60 63-10660

Trans. of Biochim[ica et] Biophys[ica] Acta (Netherlands) 1961, v. 54, 23 Dec, p. 455-468.

DESCRIPTORS: *Muramidase, *Glycoproteins, Enzymes, Peptides, *Peptide hydrolases, Ihnibition, *Micrococcus

A soluble and purified glycopeptidic substrate of lysozyme was isolated, from which glucose, glucosamine, muramic acid and four amino acids are liberated by acid hydrolysis. The degradation products of this substrate obtained by lysozyme digestion have a strong inhibitory effect on the enzyme activity and are able to form insoluble compounds with lysozyme when the concentration of the latter is high enough. This characteristic allows us to understand particularities of the kinetics of the enzyme-catalyzed reaction, especially the activator effect of neutral salts, and some morphological aspects of the lysis of intact sensitive bacteria, i. e., the "Nakamura phenomenon" and the "paradoxical inhibition of lysis" by high lysozyme concentrations. Finally the mechanism of protoplast formation can be explained. (Author)

Derviz, G. V., Mogilei, I. M., and Kimeral, R. E.
A DOUBLE MANOMETRIC APPARATUS WITH MAGNETIC STIRRER FOR ANALYZING BLOOD GASES. [1963] [11]p. (figs. omitted) 3 refs. FASEB manuscript no. S 107-2.
Order from OTS or SLA $1.60 63-19370
figs. available on loan from OTS

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 1, p. 87-92.

DESCRIPTORS: *Manometers, *Blood, *Gas analysis, Hemotology, Medical equipment, Operation, Oxygen, Carbon dioxide.

A description is given of a new model of the Van Slyke manometric apparatus for blood gas analysis. It differs from the conventional model in that two analyses may be run simultaneously in the two extraction reservoirs with which it is equipped, and in that the stirring and shaking of the liquid in the extraction reservoirs is accomplished by magnetic stirrers. Tests of the apparatus showed that there are certain peculiar features in working with it, but that the results obtained on it are the same as those given by a conventional Van Slyke apparatus. The productivity of the new apparatus is almost double that of the conventional Van Slyke manometric apparatus.

Grob, Kurt.
SOME EXPERIENCES WITH ANALYTICAL QUALITY DETERMINATION OF SWISS HOME-GROWN TOBACCO. Paper presented at the Coresta Symposium, Istanbul, Aug 60. [1963] 5p. 5 refs.
Order from SLA $1.10 63-14370

Trans. of [Cooperation Centre for Scientific Research Relative to Tobacco. Bulletin d'Information] (France) 1961, no. 1 [p. 89-91].

DESCRIPTORS: *Tobacco, Chemical analysis, *Carbohydrates, *Taste, Proteins, Chemical analysis, Switzerland.

Systematic tests with Swiss home-grown tobacco varieties to determine the correlation between the sugar content of the tobacco and the smoke quality led to the judgement, the more reducing sugar the worse the taste of the smoke. High sugar content of the green leaf, however, is to be regarded as a positive quality factor, being an indication for good acclimatization of the plant to the environment. On the other hand sugar is the most important energy supply for the desired reactions occuring in the green harvested leaf. While no specific correlation was found between total protein content and smoke quality, this was the case with the water soluble protein content. An improved method for the determination of this protein fraction is described. (Author)

Gusev, S. I. and Sokolova, E. V.
VOLUMETRIC MICRODETERMINATION OF CHLORIDES IN SUBSTANCES OF BIOLOGICAL ORIGIN. [1963] [7]p. 5 refs. FASEB manuscript no. S 213-2.
Order from OTS or SLA $1.10 63-19384

Trans. of Laboratornoe Delo (USSR) 1962, v. 8, no. 7, p. 30-33.

DESCRIPTORS: *Volumetric analysis, *Microanalysis, *Chlorides, Naphthalenes, Amines, Pyridines, Chemical reactions, Synthesis, Lead compounds, Complex compounds, Chemical indicators, *Urine, *Blood serum, Rabbits.

A method of determination of chloride ions by means of β-hydroxynaphthylal-α-aminopyridine is described. The method is sufficiently rapid, and is no less accurate than the argentometric method. (Author)

Kikutani, Motosuke.
ON THE PHYSICAL PROPERTIES OF THE PRINCIPLE OF THE MAININI REACTIONS. Rept. 2 of Chemical Studies on Placental Chorionic Gonadotropic Hormone. [1963] 13p. (figs. tables omitted) 13 refs.
Order from SLA $1.60 63-14611

Trans. of [Yakugaku Zasshi (Japan) 1957, v. 77, no. 4, p. 375-379].
Another trans. is available from SLA as 58-112.

DESCRIPTORS: *Glycoproteins, Proteins, *Pituitary hormones, Molecular structure, Molecular weight, Reproductive system, Membranes (Biology), Electrophoresis, Diffusion, Physical properties.

Various physical constants were determined for the principle of the Mainini reaction (MG), isolated from human placenta as a roughly homogeneous product according to electrophoretic and ultracentrifugal examinations. From the determination of its mobility rate the iso-electric point of MG was found to lie between pH 4.1 and 4.2. Its diffusion constant was $D_{20\omega} = 2.53 \times 10^{-7}$ cm.^{2}/sec., and the sedimentation constant was $S_{20\omega} = 2.55 \times 10^{-13}$ (cm./sec.) /(dyne/g.). The molecular weight of MG calculated from these constants is about 100,000 and about 150,000 from light-scattering analysis. Such a large difference due to the method of determination was assumed to be caused by the high content of sugars. The MG molecule is assumed to take rod form of an extremely elongated type showing friction ratio $f/f_0 = 2.68$, axial ratio of prolate 29.4 to 33.3, and oblate 40 to 55. (Author)

Klingenberg, H. G.
FACTORS INFLUENCING THE HEAT COAGULATION OF OVALBUMIN. [1963] 8p. 13 refs.
Order from SLA $1.10 63-11964

Trans. of Hoppe-Seyler's Z[eitschrift für] Physiol[ogische] Chem[ie] (West Germany) 1952, v. 291, p. 16-23.

DESCRIPTORS: *Albumins, Proteins, *Eggs, Coagulation, Heat treatment, Stability.

It was determined that an anionic protein such as ovalbumin can be stabilized with negatively charged substances without influencing the pH of the solution while it can be labilized with positively charged substances. The extent of turbidity of the protein solution following heat treatment seems to depend not so much on the concentration of the labile protein but rather on the ratio of labile: stable protein. It can obviously be assumed that the differently charged labile and stable proteins react among themselves. (Author)

Konikova, A. S., Kritsman, M. G. and others.
SYNTHESIS OF INDIVIDUAL AMINO ACIDS FROM AMMONIA AND KETO ACIDS BY VARIOUS FORMS OF BACTERIA [Sintez Individual'nykh Amino-Kislot iz Ammyaka i Ketokislot u Razlichnykh Vidov Bakterii]. [1963] 15p. 6 refs.
Order from OTS or SLA $1.60 63-14621

Trans. of Biokhimiya (USSR) 1949, v. 14 [no. 3] p. 223-229.
Another trans. is available from SLA as RT-172 [16]p.

DESCRIPTORS: Synthesis, *Amino acids, *Ammonia, *Ketones, Organic acids, *Bacteria, Nitrogen, Paper chromatography, Aspartic acid, Glutamic acid, Alanines, Fermentation.

Ohnishi, Isao.
ON THE OXIDATION OF TOBACCO LIGNIN BY NITRO-BENZENE. [1962] 6p.
Order from K-H $7.50 K-H 5161

Trans. of unidentified article issued by the Tobacco Research Dept., Central Research Inst., The Japan Monopoly Corp., 17 June 54.

DESCRIPTORS: *Oxidation, *Tobacco, *Lignin, *Nitrobenzenes.

Palomo Coll, Antonio Luis.
α-HALOGENATED DERIVATIVES OF P-METHOXY-PROPYLBENZENE AND SYNTHESIS OF P, P'-DI-HYDROXY -δλ -DIPHENYL-N-HEXANE (HEXOESTROL) BY CYCLIZATION. [1963] [15]p. 6 refs.
Order from SLA $1.60 63-14675

Trans. of Afinidad (Spain) 1951, v. 28, Nov/Dec, p. 264-269.

DESCRIPTORS: *Alkoxy radicals, *Propyl radicals, *Benzenes, *Hydroxides, *Phenyl radicals, *Hexanes, Halogenation, Synthesis (Chemistry), Rings, *Estrogens, Hormones.

The synthesis of hexoestrol was accomplished by starting from anisol and propionic aldehyde which during the process of chloroalkylation produces a good yield of p-methoxy-OC-chloropropylbenzene, and finally, is condensed with magnesium and demethylated with hydriodic acid; this is preferred to the use of anethol and p-methoxy-phenylethlmethanol, because the results are very inferior to those obtained by the technique described. Finally, the theoretically genetic chemical reactions existing between hexoestrol and sexual hormones are observed, and it is of interest to note that the exact structural development leans to an active product, which permits us to anticipate the synthesis of substances similar to hexoestrol and activity of male hormone. (Author)

Schapira, G.
THE INCORPORATION OF AMINO ACIDS INTO THE PROTEINS OF THE MUSCLE. [1963] 10p. 10 refs.
Order from SLA $1.10 63-14642

Trans. of Exp[erimental] Med[icine and] Surg[ery] (U. S.) 1954, v. 12, p. 209-214.

DESCRIPTORS: *Muscle proteins, *Amino acids, Nerves, Surgery, *Metabolism.

The phenomenon of incorporation of amino acids into proteins is described. The influence of the topography and of nerve severing on the incorporation into the myosin is discussed from the standpoint of the role of local factors.

Tanaka, Masao; Kato, Yo, and Kinoshita, Shukuo.
ENZYMATIC STUDIES ON THE OPTICAL ACTIVITY OF AMINO ACIDS. PT. VII. PURIFICATION AND SOME PROPERTIES OF GLUTAMIC ACID RACEMASE. [1963] [22]p. (foreign text included) 32 refs.
Order from SLA $2.60 63-16248

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1961, v. 35, no. 14, p. 1378-1381.

DESCRIPTORS: *Amino acids, *Glutamic acid, *Enzymes, Purification, *Racemases, Optical analysis, *Stereochemistry.

Yakovlev, N. N., Kaledin, S. V. and others.
A PHYSIOLOGICAL AND CHEMICAL ANALYSIS OF ADAPTATION TO SHORT PERIODS OF INTENSIVE MUSCULAR ACTIVITY IN ADOLESCENTS. [1963] [17]p. 22 refs. FASEB manuscript no. S 281-2.
Order from OTS or SLA $1.60 63-19394

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 9, p. 1105-1112.

DESCRIPTORS: Chemical analysis, *Muscles, *Adaptation (Physiology), *Exercise, Training, *Glycolysis, Energy.

High-speed exercises, carried out in the absence of a stable state, are responsible not only for greater physiological and chemical changes in the body, but also for the more rapid restitution than is found after the same exercises in a stable state. During intensive muscular activity, glycolysis plays an accessory or adaptive, and not an independent role; depending on the character of the training the increase in the maximal running speed may be accompanied by either an increase or a decrease in the part played by glycolysis in the provision of energy. The physiological and chemical adaptive changes during training with high-speed exercises follow the same course in 13-14-year old adolescents as in the older age groups. (Author)

Ziese, W.
CONTRIBUTION TO SPECIFICITY OF AMYLASE. INFLUENCE OF AMYLASE ON OXY ETHYL STARCH. [1963] 7p. 8 refs.
Order from SLA $1.10 63-14870

Trans. of [Hoppe-Seyler's] Z[eitschrift für] Physiol[ogische] Chem[ie] (Germany) 1934, v. 229, p. 213-218.

DESCRIPTORS: *Glycoside hydrolases, *Starches, *Enzymes, *Taka diastase, Ethyl radicals, Oxides, Viscosity.

Ziese, Walter.
SUPPLEMENT TO THE SPECIFICATIONS OF THE AMYLASES. II. ABOUT THE NON-OCCURRENCE OF REDUCING POWER WITH ENZYMATIC DISINTEGRATION OF OXYETHYL STARCH OBTAINED FROM NATIVE STARCH. [1963] 13p. 7 refs.
Order from SLA $1.60 63-14871

Trans. of [Hoppe-Seyler's] Z[eitschrift für] Physiolog[ische] Chem[ie] (Germany) 1935, v. 235, p. 235-245.

DESCRIPTORS: *Glycoside hydrolases, *Enzymes, *Starches, Potatoes, Ethyl radicals, Hydrolysis, Reduction (Chemistry), Viscosity.

Barashkov, G. K.
CHEMISTRY OF BLUE-GREEN ALGAE (CYANOPHYCEAE). 8 Mar 63 [18]p. 63 refs.
FTD-TT-63-193; AD-400 510.
Order from OTS or SLA $1.60 63-19547

Unedited rough draft trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 3, p. 447-454.
An abstract trans. is available from OTS or SLA $1.10 in 62-32780, AID-62-115, 1 Aug 62 [10]p.

DESCRIPTORS: Chemical analysis, *Algae, Biochemistry, Plants (Botany), Carbohydrates, Nitrogen compounds, Lipids.

A review of the literature.

Barashkov, G. K.
CHEMISTRY OF DIATOMIC ALGAE (DIATOMEAE) [Khimiya Diatomovy Vodoroslei (Diatomeae)].
7 Mar 63 [16]p. 41 refs. FTD-TT-63-192; AD-400 511.
Order from OTS or SLA $1.60 63-19548

Unedited rough draft trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 9, p. 1350-1356.
Another trans. is available from OTS or SLA $2.60 as 63-13589 [1962] 24p.; an abstract trans. $1.10 in 62-32780, AID-62-115, 1 Aug 62 [10]p.

DESCRIPTORS: Chemical analysis, *Algae, Biochemistry, Plants (Botany), Carbohydrates, Nitrogen compounds, Lipids.

A review of the literature.

Einor, L. O. and Kolesnikov, P. A.
PARTICIPATION OF PHOSPHOPYRIDNE NUCLEOTIDES IN THE RESPIRATION OF CHLORELLA.
4 June 63, 10p. 15 refs. JPRS: 19548.
Order from OTS $0.50 63-21977

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1962, v. 19, no. 1, p. 31-38.

DESCRIPTORS: *Phosphoproteins, Pyridines, *Nucleotides, Respiration, *Algae, Photosynthesis.

It is shown that there is present in chlorella a pyridne nucleotide oxidase system, which is similar to the pyridne nucleotide oxidase system in higher plants.

Kölle, G.
USE OF THE SPOT METHOD ACCORDING TO KRAFT IN PLANT BREEDING FOR NICOTINE DETERMINATION IN GREEN TOBACCO PLANTS (Anwendung der Tüpfelmethode nach Kraft in der Pflanzenzuechtung zur Nikotinbestimmung in Grünen Tabakpflanzen). [1963] [8]p.
Order from SLA $1.10 63-14392

Trans. of der Züchter (West Germany) [1961] v. 31, no. 6, p. 263-265.

DESCRIPTORS: Chemical analysis, *Nicotine, *Tobacco, Plants (Botany), Genetics, *Paper chromatography.

The plants of 2 segregating generations were examined for their nicotine content in the green with the spot method, according to Kraft, and in dried condition with the picrate method and the 2 nicotine values were compared with each other in the form of a correlation table. The application of the spot method as a rapid method in plant breeding is discussed and it is found that the value of the statements of nicotine contents of green plants is very restricted for breeding practice. Only when the green plant is free of nicotine can it be concluded with assurance that it will also be free of nicotine in the dry condition. A high nicotine content in the green plant, however, does not permit the conclusion about the final nicotine content of its dried leaves. For breeding practice the application of the nicotine determination methods of green plants is restricted to the selection of a part of plants free of nicotine. (Author)

Rodionova, N. A.
THE CHANGE IN THE PROTEIN COMPLEX OF THE COTYLEDONS OF CHICK-PEA DURING GERMINATION (Ismenenie Belkovogo Kompleksa Semyadolei Nuta v Protsesse Prorastaniya). Nov 62 [10]p. 11 refs.
RTS-2180.
Order from OTS or SLA $1.10 63-15947

Trans. of Glavnyi Botanicheskii Sad [Pushinskoe]. Byulleten' (USSR) 1957 [no. 28] p. 56-62.

DESCRIPTORS: *Proteins, *Seeds, Growth, Chemical analysis, Plants (Botany).

This investigation showed that during the germination of chick-pea seeds there is a change in the protein complex of the cotyledons. The fall in the content of globulins in the first 8 days of germination and the insignificant reduction in the amounts of albumins and glutelins indicate that synthesis of the proteins in the growing parts of the plant takes place in this period because of the products of the break-down of the globulins. The appearance on the electrophoresis chart of albumins of the new fraction indicates that during germination albumin undergoes considerable changes. The increase in the amount of amino groups in the vicilin, and the increase in the specific rotation and viscosity of the vicilin solution during germination are evidence of the development and sub-division of the protein globules of this protein. The reduction in the amount of the dicarboxylic amino acids in the protein preparations is evidence of their easy mobilization in the process of germination.

Shardakov, V.
DETERMINATION OF THE ABSORPTIVE POWER OF LEAVES BY THE LIQUID FLOAT METHOD (Opredelenie Sosushchei Sily List'ev Metodom Zhidkikh Poplavkov). [1963] [7]p. (foreign text included) 5 refs.
CSIRO Trans. no. 5684.
Order from OTS or SLA $1.10 63-19153

Trans. of Akademiya Nauk Uzbekskoi SSR, Tashkent. Doklady, 1951, no. 9, p. 32-34.

DESCRIPTORS: Determination, *Absorption (Biological), *Plants (Botany), Liquids, Carbohydrates.

Medical Specialties and Equipment

Mollen, H. and Hartmann, T.
PROCESS FOR MANUFACTURE OF PRODUCTS CONTAINING FINELY DIVIDED RADIOACTIVE MATERIALS. [1963] 4p.
Order from OTS or SLA $1.10 63-14346

Trans. of Belg[ian] pat[ent] 541,504, appl. 22 Sep 55, granted 15 Oct 55. Ger. appl. 29 Sep 54.

DESCRIPTORS: *Foams, Manufacturing methods, Additives, Particles, *Radioactive isotopes, *Radiation therapy, *Medical supplies.

The finely divided radioactive material is incorporated in a water-insoluble, natural or synthetic, thermoplastic or polymer mass, which is converted by any known method to a foam containing preferably a very large number of fine bubbles. The vacuolar, stabilized mass is used for manufacture of therapeutic products like compresses, bandages, ligatures and the like. (Author)

Portnov, F. G.
INFORMATION ON DEVELOPMENT AND PRODUCTION OF SOVIET AIR-IONIZATION EQUIPMENT. 4 June 63, 4p. (figs. omitted). JPRS: 19546.
Order from OTS $0.50 63-21975

Trans. of mono. Aeriony i Ikh Lechebnoe Primenenie (Aero-ions and their Use in Medicine) Riga, 1961, p. 30-32, 41-42.
Another trans. is available from OTS or SLA $3.60 in 63-13328, JPRS-16339, 26 Nov 62 [36]p.

DESCRIPTORS: *Ionization, Air, Ions, Generators, Ion sources, Therapy, *Medical equipment.

Contents:
Hydrodynamic air ionizers (hydroaeroionizers)
Comparison of aeroionizers.

Rosset, Cyrille-Victor.
ACCESSORY CARRIED ON THE HUMAN BODY, tr. by P. C. C. 27 Feb 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-15771

Trans. of French patent 995,367, gr. 19, cl. 2, appl. 17 Sep 49, granted 14 Aug 51, pub. 30 Nov 51.

DESCRIPTORS: Medical equipment, *Magnetic detectors, Magnetic effects, Biophysics.

The invention involves an accessory carried on the human body and characterized by a magnetic stone picking up magnetic effluvia emanating from the northern zone of the earth and transmitting them to the person carrying the accessory, providing for the effective action of these effluvia on the body of said person. The magnetic stone is combined with precious stones, the unit forming both an accessory picking up magnetic effluvia and a jewelry article. (Author)

Venturi, Francesco.
SYRINGE WITH FIXED PLUNGER, tr. by J. R.-P. 28 Mar 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-19058

Trans. of Italian patent 310,672, cl. XII, appl. 5 Apr 33, granted 31 Aug 33, printed Mar 37.

DESCRIPTORS: *Medical equipment, *Injection (Medicine), Design.

Microbiology

Balaeva, N. M., Korn, M. Ya. and Kul'berg, A. Ya.
THE DETECTION OF ANTIBODIES AGAINST RICKETTSIA PROWAZEKI BY THE LUMINESCENT-SEROLOGICAL METHOD. 18 June 63, 8p. 15 refs. JPRS: 19738.
Order from OTS $0.50 63-31072

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1963, no. 1, p. 52-57.

DESCRIPTORS: *Antigens and antibodies, *Rickettsia, *Luminescence, Microscopy, Serum, Diagnosis.

It is shown that the Weller-Coons luminescent-serological method may be used for the purpose of making a serological diagnosis of typhus. (Author)

Bukrinskaya, A. G., Zhdanov, V. M. and others.
LUMINESCENT MICROSCOPY STUDY OF THE E FORMATION OF INCOMPLETE SENDAI VIRUS IN A TISSUE CULTURE TREATED WITH PROFLAVINE [AND] STUDY OF INTERACTION OF SENDAI VIRUS WITH CELLS OF A MEMBRANE CULTURE BY MEANS OF FLUORESCENT ANTIBODY. 10 June 63, 15p. 21 refs. JPRS: 19625.
Order from OTS $0.50 63-31019

Trans. of #Voprosy Virusologii (USSR) 1962 [v. 7] no. 2, p. 140-144, 162-167.

DESCRIPTORS: Histological techniques, Luminescence, Microscopy, *Viruses, *Parabiosis, *Culture media, *Tissues (Biology), Cells (Biology), *Membranes (Biology), Fluorescence, Antigens and antibodies, *Anthoxanthin pigments.

Gefen, N. E., Rudneva, O. A., and Bazhinov, A. G.
CONCERNING THE UTILIZATION OF β-PROPIOLACTONE FOR STERILIZING SOME LABILE BIOLOGICAL PREPARATIONS: PRELIMINARY REPORT (K Voprosu ob Ispol'zovnaii β-Propiolaktona dlya Sterilizatsii Nekotorykh Labil'nykh Biologicheskikh Preparatov (Predvarutel'noe Soobshchenie). 5 Apr 63, 13p. (figs. omitted) 10 refs. Trans. V-1826.
Order from OTS or SLA $1.60 63-19107

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 3, p. 103-108.

DESCRIPTORS: *Lactones, Propyl radicals, *Decontamination, *Biological products.

Kogan, L. M., Ulezlo, I. V. and others.
REDUCTION OF 17a,21-DIHYDROXY-20-KETOSTEROIDS BY ACTINOMYCES ALBUS 3006. Pt. 2 [on] Microbiological Transformations of Steroids. [1963] 5p.
Order from ATS $7.50 ATS-39Q69R

Trans. of #Akad[emiya] Nauk SSSR. Otd[elenie] Khim[icheskikh] Nauk. Izv[estiya] 1963, no. 2, p. 328-332.

DESCRIPTORS: *Steroids, *Transformations, *Microbiology, Reduction, Actinomyces, Hydroxides.

Kolesov, S. G. and Borisovich, Yu. F.
RECOVERY OF FILTERABLE FORM OF ANTHRAX BACILLUS FROM ANTHRAX ANTISERA. 26 Oct 62 [13]p. ABL Trans. no. 696; JPRS: R-2873-D; AD-291 042.
Order from OTS or SLA $1.60 63-19229

Trans. of Veterinariya (USSR)] 1954 [v. 31, no. 1] p. 29-33.

DESCRIPTORS: *Bacillus anthracis, Diseases, *Antibodies, Blood serum, Separation, *Culture media, Mice, Rabbits.

The authors describe seven series of experiments, in six of which they succeeded in recovering filterable forms of anthrax bacillus from anthrax antisera. Their method consisted of cultivating serum on bullion and on agar media, and the microbe colonies obtained were cultivated through several generations on the two media and passed through the organism of white mice, whereupon typical anthrax microbes were obtained, which were tested for virulence on mice, rabbits and guinea pigs. The virulence of the regenerated bacilli did not equal that of the original. (Author)

Simakova, T. L., Strigaleva, N. V. and others.
THE ROLE OF BACTERIA IN THE CONVERSION OF THE CARBON PORTION AND OF THE ASPHALT RESIN COMPONENTS OF PARAFFIN-BASE PETROLEUM UNDER ANAEROBIC CONDITIONS. 6 Feb 63 [40]p. 14 refs. FTD-TT-62-1449; AD-298 651.
Order from OTS or SLA $3.60 63-19261

Unedited rough trans. of [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut. Trudy (USSR) no. 174] Geokhimicheskii Sbornik, 1961, no. 7, p. 77-79.

DESCRIPTORS: *Bacteria, Decomposition, *Petroleum, Pseudomonas, Asphalt, Carbon, Hydrocarbons, Fatty acids, Methanes, Gases, Metabolism.

The utilization of hydrocarbons by bacteria in vital activity depends on the composition of the hydrocarbon and the distribution of the rings and radicals in the structure. Under the influence of the vital activity of bacteria changes were observed in the structural composition of methane hydrocarbons separated from the 250-300° fraction of petroleum by the formation of complex compounds with urea. The change in the isomethane and the naphthenic hydrocarbons also depended on structural composition. The change in the aromatic hydrocarbons entering into the structure of the kerosene and oily fractions studied had the same nature. Their structural composition changed because of the decrease of the aromatic rings and the increase of the paraffin chains. The formation of oxygen compounds of the C = O type was noticed in oils by optical investigation in experiments with two bacterial biocenoses. The change in the hydrocarbons and in the asphalt resin portion of the petroleum depends both on their chemical composition and on the composition of the bacterial biocenosis in respect to species. In the nutrient medium of the experiment were discovered water-soluble organic substances (fatty volatile acids, alcohols, and aldehydes). In the composition of the gas of various experiments methane and traces of higher hydrocarbons were discovered. (Author)

Neurology and Psychiatry

NERVES FROM METAL. 4 Feb 63 [3]p. FTD-TT-63-53.
Order from OTS or SLA $1.10 63-19075

Trans. from Uchitel'skaya Gazeta (USSR) 1961, 18 Nov, p. 4.

DESCRIPTORS: *Nerves, Optic nerve, Metals, *Prosthetics, Dogs.

Several dogs are lead into the room. They are barking loudly, jumping, standing on their hind legs, and wagging their tails. In short, they are behaving like normal dogs. In spite of this, we have before us an unusual phenomenon. These dogs have had parts of their sciatic nerves replaced by metal. The nerve substitution was performed by B. V. Ognev, associate member of the USSR Academy of Medical Sciences, in the electronic vision laboratory of the department of operational surgery and topographical anatomy of the Central Institute for Post Graduate Medicine. Thirty-six similar operations on thirty dogs have now been made in B. V. Ognev's laboratory. Even the implantation of an electrode into the optic nerve has been achieved. During this experiment, the animal did not lose its visual capacity. During a subsequent stage of this experiment, the nerve between the ends of the fixed electrode will be interrupted and the scientists will determine if the electrode conducts biological current. The expression, "iron nerves", has now assumed real meaning. (Report quoted in its entirety)

Gratsyanskii, A. A.
FORMS OF SCHIZOPHRENIA RESISTANT TO AMINAZINE THERAPY (O Bol'nykh Schizofereniei Rezistentykh k Aminazinoterapii) tr. by Wanda Feeley. Sep 60 [8]p. PSC no. 59-973.
Order from OTS or SLA $1.10 62-24322

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1959, v. 59, p. 172-176.

DESCRIPTORS: *Mental disorders, Therapy, Drugs, *Chlorpromazine, Psychiatry, *Psychotropic agents.

The author attempted to work out a criterion of resistance to aminazine (chlorpromazine) therapy and to provide a clinical description of schizophrenics who failed to improve after prolonged aminazine therapy. Out of 1280 patients treated with aminazine, there were 156 who showed no improvement and 71 who had not responded to treatment at the end of 100 days. The

author's conclusions are based on his study of these cases that had not responded to treatment. The cases were studied as to type of schizophrenia, duration of disease, length and dosage of aminazine therapy, and reaction to other neuroplegic drug therapy. The author recommends that the dose of aminazine be increased if improvement has not occurred after 40 days of treatment. If improvement is temporary and insignificant the dosage should be changed. Patients who have not responded to aminazine therapy of 300 mgs daily for 180 days should be considered completely resistant to this therapy. Hebephrenic and paranoid schizophrenica are classed as resistant to aminazine therapy except in the initial stages of the disease.

Nahunek, K.
THE TREATMENT OF ENDOGENIC DEPRESSIONS WITH PERPHENAZINE AND TRIHEXYPHENIDYL: [CORRELATION WITH EXTRAPYRAMIDAL SYMPTOLOGY [PT. 2] [Die Behandlung Endogener Depressionen mit Perphenazin und Trihexyphenidyl. Beziehung zur Extrapyramidalen Symptomatologie]. [1962] [10]p. (foreign text included) 14 refs.
Order from SLA $1.10 63-10707

Trans. of Acta Psychiatrica [et Neurologica] Scand[inavica] (Denmark) 1962, v. 38, no. 2, p. 112-116.

DESCRIPTORS: Psychoses, *Perphenazine, Piperidines, Phenyl radicals, Cyclohexanes, *Parasympatholytic agents.

Comparing the combination of perphenazine and trihexyphenidyl with the administration of perphenazine alone, and with the administration of trihexyphenidyl alone, there was in the favorable results obtained a significant difference in favor of the first-named combination. Making intraindividual comparisons, in the group treated without success by perhenazine a substantial improvements in the results of the therapy was obtained through an addition of trihexyphenidyl; and similarly in the group treated without success with trihexyphenidyl, substantial improvement was obtained after an addition of perphenazine. A significant relationship was established between the failure of the therapy with perphenazine, as well as the combination of perphenazine with trihexyphenidyl, and the appearance of an extrapyramidal symptomatology. These results from the therapy support the hypothesis as to the antagonism of the medicinal extrapyramidal symptomatology and the possibility of a favorable influencing of depressive syndromes with neuroleptica, and the working mechanism of the therapy was given consideration. (Author) (See also 63-10512)

Smirnov, G. D. and Aladzhalova, N. A.
ELECTRICAL ACTIVITY AND IMPEDANCE OF THE CEREBRAL CORTEX. [1962] [5]p. 6 refs.
Order from OTS or SLA $1.10 62-15045

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 3, p. 573-576.
Another trans. is available from SLA as R-4887.

DESCRIPTORS: *Cerebral cortex, *Electrical impedance, *Bioelectronics, *Anesthesia, Excitation, Metabolism, Nerves, Acetylcholine, Urethanes.

An investigation was made to clarify the connection between the character of the bioelectronics of the cerebral cortex and the magnitude of the impedance under conditions of narcosis and sudden excitation, as well as with disturbance of acetylcholine metabolism in the nerve tissue. After introduction of urethan into the regional vein of the ear of a rabbit, the resistance increased by 0.8% briefly and then changed to a prolonged lowering of 3 to 5%. The changes in capacitance were less pronounced. After 15 to 20 minutes with a small dose of urethan, the general indications of narcosis ceased and bioelectrical activity was restored. After administration of phosphacol, the resistance increased 5 to 8%, the capacitance decreased 7 to 10%, and the fluctuations of the bioelectric activity strengthened, similar to the action of convulsive poisons. Until the maximum excitation developed, the cortex did not respond to stimulation of the eye by a flashing light. Atropine administered during electrical activity restored the reaction of the cortex to the light. A change in the functional state of the cortical neurons, elicited by afferent impulses, does not give rise to changes in the impedance like the action of substances that excite the nervous system. In the rabbit, atropine blocks the action of free acetylcholine but it does not eliminate its continuing accumulation.

Pathology

ARCHIVES OF IMMUNOLOGY AND EXPERIMENTAL THERAPY, 1962, VOL. 10, NO. 3, P. [811]-933 (Archivum Immunologiae et Therapie Experimentalis). 1962, 1v. PL-480 HEW.
Order from OTS $1.50 62-11069/4

English ed. of [Archiwum Immunologii i Terapii Doswiadczalnej] (Poland) 1962, v. 10, no. 4.

DESCRIPTORS: *Immunology, *Therapy, *Metabolism, *Barbituric acids, *Amines, *CNS stimulants, *Antibiotics, Neomycins, Streptomyces, Oils, Test methods, *Muramidase, Antibodies, Fluorescence, Blood, *Glycoproteins, Erythrocytes, *Vitreous humor, *Mycobacterium, *Tuberculosis.

Contents:
Investigation on the mechanism of the degradation of 5-allyl-5-(β-hydroxypropyl)-barbituric acid in the organism: metabolism of 1-methyl-5-allyl-5-(β-hydroxypropyl)-barbituric acids in the organism of rabbits, by B. Bobranski and others
On some aliphatic and alicyclic amines with hypotensive activity, by B. Bobranski and others
Pharmacological properties of pentaerythritol derivatives. II. Monobenzalpentaerythritol, a compound stimulating the central nervous system, by J. Maj
Production of eurymycin by the 7-Ki strain of streptomyces lavendulae. I. Characterization of streptomyces lavendulae 7-Kl and comparison of its properties with those of streptomyces fradiae producing neomycin, by W. Kurylowicz and W. Woznicka
Production of eurymycin by the 7-Kl strain of streptomyces lavendulae. II. Fermentation studies and isolation of eurymycin, by H. Niemczyk and others
Production of eurymycin by the 7-Kl strain of streptomyces lavendulae. III. Characterization of preparations of eurymycin, by Z. Kowszyk-Gindifer

Structure and serological properties of mucoproteid from horse erythrocytes, by E. Lisowska
The use of corpus vitreum from bovine eyeballs for the cultivation of tubercle bacilli in He-La cells, by A. Skurski and others.
Application of the oil technique in the one-day TPI test with lysozyme, by M. Metzger and J. Ruczkowska
The use of fluorescent antibodies in the study of blood groups, by H. Matej

HERALD OF THE ACADEMY OF MEDICAL SCIENCES 1963 VOL. 18, NO. 4. 6 June 63, 158p. refs.
JPRS: 19592.
Order from OTS $3.00 63-31002

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 4, p. 1-96.

DESCRIPTORS: *Medical research, *Medicine, *Allergy, *Antigen-antibody-reactions, Muscles, Adrenal cortex, *Corticosteroid agents, Hormones, Skin, *Sensitivity, Genetics, *Nerve cells, Tissues (Biology), Diseases, *Lungs, *Eosinophils, *Atropine, Diagnostic agents, Immunology, *Penicillins, *Fungus infections, Cancer.

Contents:
Evolution of allergic reactions, by N. N. Sirotinin
Allergic alteration of smooth-muscle organs, by A. D. Ado and others
Allergy and the function of the suprarenal cortex, by V. I. Pytskii
The effect of corticosteroid hormones on skin reactivity, by B. G. Stoyanov
Antigen fixation by cells of sensitized animals, by N. V. Medunitsyn
Transmission of the allergic state by the mother, by V. L. Lashas
Allergic mechanisms of demyelinizing processes in nerve tissue, by A. Kh. Kanchurin
The clinical picture of systemic lupus erythematosus according to the experience of recent years, by E. M. Tareev
Allergic (eosinophilic) pulmonary diseases, by I. P. Lerner
The mechanism of the atropine test and the possibility of using it for diagnostic purposes, by Nguen Nang An
Immunological study of allergy to penicillin, by Yu. F. Borodin.
Evaluation of the allergic state of an organism in vitro, by V. A. Fradkin
Allergy and fungus diseases, by P. N. Kashkin and V. Ya. Nekachalov.
Franco-soviet symposium on the problem "biology of the cancer cell", by A. D. Timofeevskii

I.C.R.S. MEDICAL REPORTS, 1962, VOL. 4, NO. 2, AND SUPPLEMENT. Apr-June 62 [62]p.
Order from Institute of Contemporary Russian Studies, Fordham U., New York, 58, N. Y. $1.00, $10.00/year foreign $12.00/year

Consists of English reviews of reports on current research, selected news briefs, reports on congresses and meetings, and other items, published chiefly in Soviet medical periodicals.

DESCRIPTORS: *Medicine, *Medical research, Pathology, Nutrition, Indexes.

in Krasnaya Zvezda, 12 Apr 61
Problems of nutrition: review of Voprosy Pitaniya (USSR) 1960, v. 19 and 1961, v. 20
Nutrition studies (general) by S. A. Boguslavsky
Index to v. 3, 1961.

Contents:
Communist news briefs
Pathology
New Committee for Research Coordination as announced

I.C.R.S. MEDICAL REPORTS, 1962, VOL. 4, NO. 3. July-Sep 62, 41p.
Order from Institute of Contemporary Russian Studies, Fordham U., New York, 58, N. Y. $1.00, $10.00/year foreign $12.00/year

Consists of English reviews of reports on current research, selected news briefs, reports on congresses and meetings, and other items, published chiefly in Soviet medical periodicals.

DESCRIPTORS: *Medicine, *Medical research, Pathology, *Ultrahigh frequency, *Cybernetics, *Ballistocardiography, *Rheumatic diseases, Scientific organizations, Medical personnel, Pharmacology, Drugs, *Antibiotics.

Contents:
Communist news briefs
Biological action of UHF, reviewed by G. Y. Shinowara and A. Horava
Philosophy of cybernetics, by R. L. Korgen
Ballistocardiographic analysis of children with rheumatic fever, by A. L. Tatarinov
Scientific-technical societies and the mechanization of administration, by F. Haas
Organization of the advanced training of physicians in Tsarist Russia, the Soviet Union, and in democratic and capitalistic countries: a comparative study by a Soviet scientist
Pharmacology
The 1959-62 plan, by E. F. Fenwick
Research support of the 1959-65 plan, by S. A. Boguslavsky
Cycloserine mechanisms.

MEDICAL JOURNAL, 1962, VOL. 84, NO. 3. 1963, 61p. 103 refs. PL-480 HEW.
Order from OTS $0.50 62-11763/3

Trans. of Lijecnicki Vjesnik (Yugoslavia) 1962, v. 84, no. 3, p. 229-282.

DESCRIPTORS: *Medicine, *Pathology, Medical personnel, *Vagus nerve, *Heart, Diseases, Thorax, *Hernia, Surgery, *Lungs, Excision, Cardiac arrest, Therapy, Anatomy.

Contents:
Problems of the Organization of the Anatomico-Pathological Service, in Croatia, by A. Zimolo and Z. Kulcar
Prognosis of cardiac patients with left bundle branch block, by A. Svob
Prognosis of complete right bundle branch block, by V. Jugovic-Kump

Mediastinal hernia, by K. Strohal and M. Mrakovcic
Intralobar lung sequestration, by M. Kuis and others
Cardiac arrest and resuscitation, by I. Mohacek
Pathological verification of disease and health, by B. Kesic
The problem of post-mortem examination in the present day medical and public health services, by V. Palmovic
Two approaches in the treatment of cardiac arrest, by Z. Asperger and T. Beritic
Gabrielle Falloppio, the reformer of anatomy, by V. Dugacki.

Agapova, E. N.
ATHEROSCLEROTIC CHANGES IN THE DISTAL PORTIONS OF CORONARY VESSELS OF THE HEART AND IN THE MYOCARDIUM. [1963] [21]p. (figs. omitted) 43 refs. FASEB manuscript no. S 319-2.
Order from OTS or SLA $2.60 63-19365
figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 7, p. 19-26.

DESCRIPTORS: *Atherosclerosis, *Blood vessels, *Heart, Arteries, Muscles, Growth, Edema.

In stenosed atherosclerosis of the coronary arteries, plaques are found up to the middle third of the descending branches. The lower third exhibits pyknosis of the endothelium, thickening of the intima, and sclerosis of the vascular walls. A variety of changes, often adaptational in character, are found in most of the small-caliber arteries. The myocardium is characterized by hypertrophy of the muscle fibers, chiefly in the left ventricle, focal degenerative changes, and myocardial sclerosis with the formation of scars of varying maturity. In nonstenosed atherosclerosis, the middle third of the descending branches of the coronary arteries exhibit uneven hyalinization of the intima with necrosis of the previously existing elastic fibers in the intima and then new formation of the fibers, attenuation of the media with (Author)

Bouchard, Jacques and May, Raoul Michel.
THE EFFECT OF TOBACCO TARS IN SUBCAPSULAR GRAFTS OF THE LUNG IN THE MOUSE. [1963] [37]p. 23 refs.
Order from SLA $3.60 63-16606

Trans. of Arch[ives d']Anat[omie] Micr[oscopique et de] Morph[ologie] Exp[erimentale] (France) 1960, v. 49, p. 307-332.
Another trans. is available from K-H $38.75 as K-H 11095-b [1962] 31p.

DESCRIPTORS: *Tobacco, Tar, *Transplantation, *Lungs, Mice, Necrosis, Surgery, Lymphocytes, Blood plasma, Cells (Biology), *Mitosis.

There was grafted under the renal capsule of white mice of both sexes, fragments of lungs coming from new-born mice of the same litter. There were studied macroscopically and microscopically some grafts of lung fragments preserved 24 hours at 4^{O} in Ringer solution, and some grafts of lung fragments impregnated during 24 hours at 4^{O} with tobacco tars in solution in carbowax, or with a solution of carbowax alone. There are numerous resemblances between the subcapsulary grafts of a normal lung and of a lung impregnated with tobacco tars. In fact, certain histological traits are found in both cases. But the evolution of the treated lung differs greatly from that of the control lung. Necrosis is stronger from the beginning (2 days), then it increases again around 10 days, and decreases slightly before the final destruction: The lymphocytic invasion is delayed; the plasmocytic invasion is more precocious; the fibrous transformation, which only slightly developed, progresses more quickly than in the controls, the cytoplasmic swelling, a type of granular swelling, is more precocious, and the nuclear swelling more intense; the nuclei can be polylobed, even multiple, in one cell; and, the anomalies of mitosis are much more frequent in the first 5-10 days. (Extracted)

Buu-Hoi, N. P.
CARCINOGENIC SUBSTANCES. [1962] [141]p. (refs. omitted) 5 refs.
Order from SLA $11.00 63-16609

Trans. from Medizinische Grundlagenforschung (West Germany) 1959, v. 2.
Also available from K-H $171.25 as K-H-11480-a [1962] 137p.

DESCRIPTORS: *Carcinogenic agents, Cancer, Etiology, *Benzenes, *Heterocyclic compounds, *Polycyclic compounds, Chemical properties, Physical properties, Cells (Biology), Metabolism, Animals, *Aryl radicals, *Amines, *Azo radicals, *Alkyl radicals, Substitution reactions, *Polymers, *Steroids, Inorganic substances, Organic compounds, Therapy, Test methods.

Classification of carcinogenic substances
The methods of experimental chemical carcinogenesis
Selection of experimental animals; the principal methods of experimental chemical carcinogenesis; evaluation of results; the so-called "rapid-test method" for the determination of carcinogenic substances; co-carcinogenesis.
The most important groups of carcinogenic substances
Aromatic hydrocarbons; heterocyclic analogs of polycyclic aromatic hydrocarbons; other biological effects of polycyclic hydrocarbons and their heterocyclic analogs; the principal physical and chemical characteristics of carcinogenic hydrocarbons and their heterocyclic analogs; cell addition to and metabolism of carcinogenic hydrocarbons and their heterocyclic analogs in the animal body; on the mechanism of carcinogenesis by polycyclic hydrocarbons; the carcinogenic arylamines and azocompounds; cancer-producing alkylating compounds; high-polymeric carcinogenic substances; the problem of carcinogenic steroids; some other types of organic carcinogenics; inorganic carcinogenic substances.
Carcinogenic substances in cancer therapy and cancer prophylaxis

Cathala, J. and Martin, G.
SEPTICEMIA WITH PSEUDOMONAS AERUGINOSA (BACILLUS PYOCYANEUS) WITH MENINGITIS AND MULTIPLE OSTEOARTICULAR LOCALIZATIONS: TREATMENT WITH COLIMYCIN [AND] RECOVERY (Septicemie a Pseudomonas Aeruginosa (Bacille Pyocyanique) avec Meningite et Localisations Osteo-Articulaires Multiples. Traitement par la Colimycine. Guerison). [1963] 12p. 15 refs.
Order from SLA $1.60 63-16502

Trans. of Nourrisson (France) 1960, v. 48, Mar/Apr, p. 41-48.

DESCRIPTORS: *Bacteria, *Blood, Toxins and antitoxins, *Pseudomonas, *Meningitis, Bone, *Joints (Physiology), *Colimycin, Neissericeae.

This case is that of a Bacillus pyocyaneus (Pseudomonas aeruginosa) septicemia attacking an infant two and one-half months old, whose evolution was aggravated by two types of septic localizations, initial meningeal on the one hand and multiple delayed osteoarticular localizations on the other, whose recovery was obtained, after the failure of polyvalent antibiotic treatments, by general and local administration of Colimycin, whose effectiveness was particularly distinct and successful. (Author)

Chu, Kuei-ching, Ha, Fen-hua and others.
BRONCHOGENIC CARCINOMA: A SURVEY OF 100 CASES. [1962] [30]p. 15 refs.
Order from OTS or SLA $2.60 63-16608

Trans. of [Chung Hua Chieh Ho Ping K'o Tsa Chih] (Chinese People's Republic) 1959, no. 2, p. 92-98. Also available from K-H $35.00 as K-H-9396-b.

DESCRIPTORS: *Cancer, *Lungs, Respiratory diseases.

Demidova, P. V.
PECULIARITIES OF RHEUMATIC CHOREA RELAPSES. [1963] [9]p. 1 ref. FASEB manuscript no. S 236-2.
Order from OTS or SLA $1.10 63-19389

Trans. of Sovetskaya Meditsina (USSR) 1962, v. 25, no. 1, p. 145-147.

DESCRIPTORS: *Rheumatic diseases, Therapy.

The recurring forms of rheumatic chorea include recurrences of choreic hyperkinesis resembling the trace reactions that follow an episode of rheumatic chorea. With a pseudorecurrence there are no signs of exacerbation of the rheumatic process. Identification of pseudorecurrences is of theoretical value in understanding the pathogenesis of trace reactions. It is also of practical value because they require special anti-rheumatic treatment. The administration of restoratives, sedatives, and soporifics is recommended for pseudorecurrences of chorea. (Author)

Dolin, L. A.
THE PATHOLOGICAL MORPHOLOGY OF THE CENTRAL NERVOUS SYSTEM IN EXPERIMENTAL ATHEROSCLEROSIS IN THE DOG. [1963] [19]p. (figs. omitted) 47 refs. FASEB manuscript no. S 322-2.
Order from OTS or SLA $1.60 63-19364
figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 7, p. 42-49.
Another trans. is available from OTS or SLA $3.60 in 62-33726, JPRS-15985, 1 Nov 62 [40]p.

DESCRIPTORS: Pathology, Morphology, *Brain, *Spinal cord, *Nervous system, *Atherosclerosis, Dogs, Histology, Cholesterol, Methyl radicals, Thiouracils.

The intensity of the histological changes in the central nervous system (destructive changes in the blood vessel walls, degenerative changes in the neurons, and proliferative-degenerative changes in the glia) depends on the duration and the severity of the experimentally induced illness, evoked in animals by the feeding of cholesterol in conjunction with the action of methylthiouracil. The structural changes observed in the central nervous system in experimental atherosclerosis indicate that there is a definite similarity between the pathological process in the dog and in man, with respect both to its location and to its morphology. (Author)

Goncharov, G. D.
REACTION OF FISH IN RESPECT TO IMMUNOLOGY (Immunologicheskaya Reaktivnost i Ryb) tr. by Peter M. Rotast. [1963] [12]p. 19 refs.
Order from OTS or SLA $1.60 63-15157

Trans. of Akademiya Nauk SSSR. Institut Biologii Vodokhranilishch. Byulleten', 1962, no. 12, p. 53-56.

DESCRIPTORS: *Immunology, *Fishes, Reaction (Psychology), *Antigens and antibodies, Bacteria, *Agglutinins, Immune serums.

An investigation was conducted as to the ability of fish, in a manner similar to higher vertebrates, to produce specific antibodies in the blood serum. Emphasis was placed on proper nutrition and optimum temperature regimen. Carp, bream and roach were held under aquarium and under semi-natural conditions. The fish were fed Fish Husbandry Center combination-nutrients and were seldom fed oligochaets. The formation of antibodies (agglutinins) in the experimental fish was determined by the Vidal reaction after 3 to 24 hours at room temperature. The O-antigen of the bacteria aeromonas punctata (strain "KV") served as an antigen for the Vidal's reaction and for immunization. Daily agar cultures of the organisms were inactivated by heat at 56°C for 30 minutes. These cultures had been isolated from the intestines of carp. To determine the existance of a specific reaction, parallel agglutinations with O-antigens of pseudomonas fluorescens (strain ZZ) and escherichia coli (strain "5") were performed. The cells were washed from the agar cultures, inactivated and the suspensions were standardized for immunization by adjusting their density in a photoelectric colorimeter. The O-antigen was injected intraperitioneally 1, 2 and 5 times at 5 to 10 day intervals. The doses were adjusted for the size of the fish injected. Results of the immunization of the fish show that at low water temperatures (6°C-7°C) there is no formation of specific antibodies. However, fish held in warmer water (15°C-25°C) produced homogeneous O-agglutinants. These antibodies

were strictly specific, sera of fish immunized by injections of "KV" O-antigen will not agglutinize the O-antigen of another kind of bacteria. In addition, the same sera will not agglutinize the O-antigen of aeromonas punctata (strain "KA"), although it is of the same bacteria.

Goncharova, V. K.
TRANSPLANTABILITY OF OVARIAN TUMORS INDUCED BY HORMONAL DISTURBANCES IN ALBINO RATS. [1963] [11]p. 20 refs. FASEB manuscript no. S 186-2.
Order from OTS or SLA $1.60 63-19378
figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 5, p. 13-18.

DESCRIPTORS: *Transplantation, *Sex glands, *Neoplasms, *Hormones, Pathology, Rats, Cells (Biology), Spleen, Corticosteroid agents, Pituitary hormones, Adrenocorticotropic hormone.

Ovarian tumors induced in mongrel albino rats by the Biskinds' method are transplantable into castrated mongrel albino rats, both male and female. Successful transplantation was obtained in 6.6% of cases when original tumors with a development period of 14-20 months were used. Three generations of endometriomas and two generations of luteomas were obtained. The tumors grew more slowly then transplanted subcutaneously than when implanted into splenic tissue. Administration of cortisone and ACTH did not increase the transplantability of the Biskinds' tumors. The participation of gonadotropins is not essential for the development of transplantable ovarian tumors. (Author)

Gulenko, A. V.
PROGNOSTIC SIGNIFICANCE OF NON-HEMOGLOBIN BLOOD IRON DETERMINATION IN CERTAIN INFECTIOUS DISEASES. [1963] [9]p. 11 refs. FASEB manuscript no. S 103-2.
Order from OTS or SLA $1.10 63-19369

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 7, p. 62-65.

DESCRIPTORS: Hemoglobin, *Hematology, *Iron, Blood, Determination, *Communicable diseases, Reticuloendothelial system, Typhus fever, Brucellosis, Vaccines, Diagnosis.

In infectious diseases, the plasma level of the nonhemoglobin iron is reduced; the only exception is Botkin's disease (infectious hepatitis), where it is increased. The non-hemoglobin plasma iron level closely reflects the severity of the disease process. The level of the non-hemoglobin iron reflects quite faithfully the pathologic processes (toxemia) taking place in the course of infectious diseases and provides a good test of cure, particularly in Botkin's disease. (Author)

Komorovskii, Yu. T., Markova, E. A., and Demborinski'i, I. V.
ELECTROENCEPHALOGRAPHY IN THE DIAGNOSIS OF AGASTRIC ASTHENIA SYNDROME. [1963] [16]p. 45 refs. FASEB manuscript no. S 104-2.
Order from OTS or SLA $1.60 63-19358

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 7, p. 88-94.

DESCRIPTORS: *Electroencephalography, *Diagnosis, *Gastrointestinal system, Stomach, Excision, Plastic surgery, Diseases, Hypoglycemia.

In agastric asthenia, E E G is an important objective diagnostic procedure which provides an exact indication of the severity of the disease. In patients with agastric asthenia, E E G helps in establishing the indications and in assessing of the efficacy of conservative and surgical treatment. Plastic reconstructive surgery leads to normalization of E E G and brings relief in severe forms of agastric asthenia not responding to conservative treatment. (Author)

Kreinin, L. S.
DETERMINATION OF THE PROTECTIVE PROPERTIES OF SERA. A TABLE FOR DETERMINING THE PD_{50} DOSE AND THE LIMITS OF ITS VARIATIONS. [1963] [6]p. 3 refs. FASEB manuscript no. S 232-2.
Order from OTS or SLA $1.10 63-19387

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962 [v. 33] no. 2, p. 70-73.

DESCRIPTORS: *Serum, *Dosage, Determination, Microorganisms, Immunology.

Lickint, F., Büchner, M. and others.
EXPERIMENTAL CONTRIBUTIONS TO THE ETIOLOGICAN AND DIAGNOSTIC RESEARCH IN THE FIELD OF MALIGNANT DISEASES, PARTICULARLY OF LUNG CANCER [Experimentelle Beiträge zur Ätiologischen und Diagnostischen Forschung auf dem Gebiet der Malignen Erkrankungen, insbesondere des Lungenkrebses]. [1962] 17p.
Order from K-H $21.25 K-H-5472-a

Trans. of [Zeitschrift] für die Gesamte Innere Med[izin] und ihre Grenz[gebiete] (East Germany) 1955 [v. 10, 15 Oct] p. 961-967.

DESCRIPTORS: *Medical research, Etiology, Diagnosis, Diseases, *Cancer, *Lungs.

Makarov, N. I., Saleev, N. A. and others.
INCIDENCE AND PREVENTION OF ANTHRAX IN THE CISCAUCASIAN AND TRANSCAUCASIAN REPUBLICS. 22 Jan 63 [11]p. 8 refs. ABL Trans. no. 722; JPRS: R-2977-D; AD-298 606.
Order from OTS or SLA $1.60 63-19239

Trans. of #[Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii] (USSR) 1962, v. 33, no. 9, p. 105-111.

DESCRIPTORS: *Bacillus anthracis, *Anthrax, *Epidemiology, Etiology, Man, Spores, Bovines, Soils, Diseases, Inhibition.

Most cases (94%) of anthrax in the Ciscaucasian and Transcaucasian republics occur in rural localities as a result of handling or secretly slaughtering diseased animals. Eradication of anthrax is difficult because the spores of the causative agent remain viable in the soil for many years. Nevertheless, the incidence of the disease could be substantially reduced if well known prophylactic measures were systematically carried out.(Author)

Poetova, V. T., Gitel'zon, I. I., and Terskov, I. A.
THE IMMUNE STABILITY OF ERYTHROCYTES [AND] TABLE OF CONTENTS: 10 May 63, 12p. 4 refs. JPRS. 19135.
Order from OTS $0.50 63-21798

Trans. of Voprosy Biofiziki, Biokhimii i Patologii Eritrotsitov (USSR) 1961, v. 2, p. 153-162, 313-314.

DESCRIPTORS: *Immunity, *Erythrocytes, Antigen - antibody reactions, *Hemolysis, Blood cells, Regeneration.

Roemer, G. B., Schrader, A., and Schild, W.
RESULTS OF SEROLOGICAL INVESTIGATIONS IN MULTIPLE SCLEROSIS. [1963] 8p. 6 refs.
Order from SLA $1.10 63-14599

Trans. of Klinische Wochenschrift (West Germany) 1953, v. 31, 15 Oct, p. 946-948.

DESCRIPTORS: *Serum, *Multiple sclerosis, Cerebellum, *Complement. Antigen-antibody reactions.

Rozina, E. E. and Amchenkov, A. M.
CHANGES IN THE NERVOUS SYSTEM OF MONKEYS INFECTED WITH VARIOUS STRAINS OF POLIOMYELITIS VIRUS. [1963] [10]p. (figs. omitted) 15 refs. FASEB manuscript no. S 187-2.
Order from OTS or SLA $1.10 63-19379
figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 5, p. 57-63.
Another trans. is available from ATS $12.00 as ATS-57P66R [1962] 7p.

DESCRIPTORS: *Nervous system, *Primates, *Poliomyelitis virus, Communicable diseases, Brain, Spinal cord.

The CNS lesions associated with various clinical forms of poliomyelitis in monkeys are similar and run an analogous course. The ribonucleoprotein (RNP) distribution in the neurons of the CNS differs in paralytic and nonparalytic poliomyelitis. In the former, the intensity of the RNP reaction in the cytoplasm of most neurons is generally reduced; in nonparalytic cases, the opposite tendency is observed. Injection of live Sabin poliomyelitis vaccine produced lesions typical of those caused by attenuated virus, with increased cytoplasmic RNP content in a majority of neurons. (Author)

Ruiz Sanchez, Fco., Ruiz Sanchez, Amado, and Uribe Calixto, M.
TREATMENT OF INFANTILE BACTERIAL DIARRHEAS WITH COLISTIN (El Tratamiento de las Diarreas Bacterianas del Niño con Colistina). [1963] 16p. 28 refs.
Order from SLA $1.60 63-16522

Trans. of Med[icina]; Rev[ista] Mexicana, 1961, v. 41, 25 Jan, p. 25-38.

DESCRIPTORS: *Bacteria, Infants, *Colimycin, Antibiotics, Etiology, Therapy.

Infants afflicted with bacterial diarrhea were treated with Colistin. The age limits were 15 days and 36 months. 17 cases were boys and 18 cases were girls. The clinical form was very serious in 9 infants, only serious in 16, and of moderate severity in 10 cases. Before treatment B. proteus was isolated in 8 cases, Sh. flexneri in 7, E. coli in 6, Sh. boydii in 3, B. paracolon in 2, and Sh. sonnei, staphylococci, P. aeruginosa and C. albicans in only one case, respectively; in 5 cases the stool cultures proved negative for probable causal microorganisms. An attempt was made to correct the electrolytic imbalance and dehydration before treatment. The drug was administered orally at doses varying from 100 to 150,000 units by weight and by day. The daily amount in milligrams was between 5 and 50. The duration of treatment was between 2 and 10 days. There were 4 deaths, 3 poor results, 2 moderate results, 13 good and 13 very good results. The tolerance was good. There were no toxicity manifestations. (Author)

Safonov, Yu. D.
THE DIAGNOSTIC IMPLICATIONS OF THE BALLISTOCARDIOGRAM IN CARDIAC ARRHYTHMIAS AND CONDUCTION DISTURBANCES IN MITRAL STENOSIS AND IN MYOCARDIAL FIBROSIS OF ATHEROSCLEROTIC ORIGIN. [1963] [24]p. 23 refs. FASEB manuscript no. S 283-2.
Order from OTS or SLA $2.60 63-19357

Trans. of Kardiologiya (USSR) 1962, v. 2, no. 2, p. 38-44.

DESCRIPTORS: Diagnosis, *Ballistocardiography, *Arrhythmia, Bioelectronics, *Heart, Cardiac muscle, *Atherosclerosis, Diseases.

Shochman, J. and Malaskova, V.
RAPID SIMPLE TEST FOR THE DEMONSTRATION OF MYELOMA PARAPROTEIN. [1963] 4p. (figs. omitted).
Order from SLA $1.10 63-16384

Trans. of Vnitrni Lekarstvi (Czechoslovakia) 1961, v. 7, p. 1242-1246.

DESCRIPTORS: *Blood proteins, *Globulins, Serum albumin, *Diagnosis, Electrophoresis.

Slinchenko, N. Z.
THE PATHOLOGICAL ANATOMY OF PNEUMOCONIOSIS AMONG MINERS OF THE KRIVOI ROG IRON ORE DISTRICT. [1962] [17]p. 31 refs. FASEB manuscript no. S 147-2.
Order from OTS or SLA $1.60 63-19001
Figs. available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24 no. 6, p. 21-28.

DESCRIPTORS: Pathology, Anatomy, Iron industry, *Pneumoconioses, Industrial medicine, *Ores, *Dusts, *Iron, Lungs.

The object of the present research was to investigate the morphological changes in the lungs of miners engaged on the principal underground trades, and to elucidate certain problems in the morphogenesis of these changes of importance in the diagnosis, clinical pattern, and pathogenesis of the disease. The development of pneumoconiosis begins early and is gradually progressive. The sites of formation of nodules in the lungs are: (a) the lymphatics, (b) the bronchioles and small bronchi, and (c) the alveoli. The changes in the walls of the blood vessels and bronchi are secondary. They are associated with underlying changes in the lymphatics which surround them or form a part of them. In longstanding silicosis, sidero-silicosis and sidero-silicatosis, a tumor-like fibrosis of the lungs develops. In forms close to siderosis, the roentgenological picture of pneumoconiosis is observed before appreciable fibrosis has developed at the sites of dust deposition, but moderate fibrosis subsequently develops in the accumulations of iron oxides. Very often the degree of development of pneumoconiosis bears no direct relationship to the duration of underground work.

Tatarinov, A. L.
CONTRIBUTION TO THE DEVELOPMENT OF CHEN CHIU THERAPY IN CHINA (K Istorii Razvitiya Chjen'-Tszyu Terapii v Kitae). 21 Feb 63, 3p.
Order from OTS or SLA $1.10 63-19045

Trans. of Pediatriya (USSR) 1959 [v. 37] no. 3, p. 73-77.

DESCRIPTORS: *Chinese traditional medicine.

Timofeev, M. K., Karelina, V. I., and Kolushev, I. P.
AN OUTBREAK OF ANTHRAX ALONG THE ARZAMAS-GORKY CATTLE-DRIVING TRAIL. 22 Jan 63 [9]p. ABL Trans. no. 721; JPRS: R-2976-D; AD-299 068.
Order from OTS or SLA $1.10 63-19240

Trans. of #[Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii] (USSR) 1962, v. 33, no. 7, p. 32-35.

DESCRIPTORS: *Bacillus anthracis, Bovines, *Anthrax, Veterinary medicine, *Epidemiology, Man.

Analysis of the outbreak of anthrax among animals and humans along the Arzamas-Gorky cattle-driving trail (in the Russian Republic) in August 1960 revealed that it was due to inefficiency and neglect by the local veterinary services. Many of the herdsmen were young and inexperienced in the work, and few had been vaccinated. Increasing activity in the area is likely to bring about even more severe outbreaks unless proper prophylactic measures are taken in time. (Author)

Tsellarius, I. K. and Shmalii, K. V.
THE EFFECTIVENESS OF FLUORESCENCE AND PHASE-CONTRAST BACTERIOSCOPIC DIAGNOSIS OF TUBERCULOSIS. 27 May 63, 7p. 10 refs. JPRS: 19430.
Order from OTS $0.50 63-21928

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962 [v. 33] no. 6, p. 103-107.

DESCRIPTORS: *Fluorescence, *Histological techniques, Bacteria, *Microscopy, Diagnosis, *Tuberculosis, *Contrast media, *Biological stains.

Staining of the mycobacteria of tuberculosis with auramine 00 containing rhodamine S is quite specific. Of the many bacteria studied only the acid-fast saprophytes took this stain, but their fluorescence was appreciably different in brightness and color from that of tubercle bacteria. By means of fluorescence bacterioscopy it was possible to demonstrate tuberculosis bacteria in 52-56 percent more cases than with ordinary light bacterioscopy (Ziehl-Neelsen method); thereby, the examination was completed three-four times more quickly. Phase-contrast bacterioscopic diagnosis of tuberculosis is specific, makes it possible to demonstrate positive results in an additional 26-32 percent of cases and cuts the time by two-three times. The flotation method considerably improves the results of any type of microscopy. (Author)

Zaporozhchenko, A. Ya.
EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF ANTHRAX. 22 Jan 63 [10]p. 8 refs. ABL Trans. no. 723; JPRS: R-2978-D; AD-299 067.
Order from OTS or SLA $1.10 63-19238

Trans. of #[Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii] (USSR) 1962, v. 33, no. 9, p. 111-115.

DESCRIPTORS: *Bacillus anthracis, *Anthrax, *Epidemiology, Distribution.

Analysis of 2400 cases of anthrax recorded between 1920 and 1959 revealed that 58.7% were sporadic, 14.1% had familial foci (two members sick at the same time), and 27.2% represented outbreaks involving three or more members falling ill within the same 10-day period and with a common source of infection. Study of the clinical materials showed that 94.1% of the cases were of the cutaneous form, 5.2% of the intestinal form, and 0.7% of the pulmonary and ocular forms. The total death rate was 9.33%; the pulmonary and ocular death rates were 100%. In 25.7% of the cases the disease was of occupational nature; in 74.3% of the cases it occurred under domestic conditions. The intestinal form of the disease was contracted after the patients ate the meat of animals that died of anthrax or who touched food products with contaminated hands. (Author)

Zubilov, Yu. N.
THE INTERACTION OF EXCITATION AND INHIBITION IN THE RESPIRATORY CENTER DURING APNEA. [1963] [18]p. 14 refs. FASEB manuscript no. S 24-3.
Order from OTS or SLA $1.60 63-19359

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 5, p. 554-562.

DESCRIPTORS: Excitation, Inhibition, *Respiratory system, *Rhythm (Biology), *Respiration, Diaphragm, Nerves.

Apnea is characterized by arrest of respiratory movements and an absence of rhythmic electrical activity in the diaphragm. In the intercostal musculature, such activity is considerably intensified and becomes continuous. Stimulation of the vagus nerve during a deep induced apnea, at frequencies of 20, 60, and 100/sec, does not produce action potentials in the diaphragm, but does depress the rhythmic electrical activity in the intercostal musculature. During apnea, the reciprocity of the relationship between the inspiratory and expiratory parts of the respiratory center is distinctly manifested. The expiratory part of the respiratory center is in a state of prolonged tonic excitation, while the inspiratory part is in a state of deep reciprocal inhibition. The afferent impulsation from the vagus nerve exerts an inhibitory influence on whatever part of the respiratory center which is in a state of excitation at the given moment. (Author)

Pharmacology and Toxicology

CHEMICAL AND BIOLOGICAL WARFARE (USSR) BIBLIOGRAPHY, JAN 60-DEC 62. 30 Apr 63 [37]p. 278 refs. AID rept. B-63-52. AD-403 861.
Order from OTS or SLA $3.60 63-19351

DESCRIPTORS: *Bibliographies, *Chemical warfare, *Biological warfare agents, Biological warfare.

Contents of 278 entries arranged alphabetically by first author only. An author index is provided.

PROCESS FOR THE PREPARATION OF PANTOTHENIC ACID. [1963] 3p. 1 ref.
Order from OTS or SLA $1.10 63-14360

Trans. of Dutch pat[ent] 55,399, 15 Oct 43.

DESCRIPTORS: *Vitamin B complex, Preparation, Hydroxides, Methyl radicals, Butyl radicals, *Anilines, Synthesis (Chemistry), Salts, Esters, Amides, Fatty acids, Substitution reactions.

It was found that beta-alanine, its salts or esters react smoothly under mild conditions with alpha, gamma-dihydroxy-beta, beta-dimethyl butyramide in such a manner that the amide group of the latter is displaced by beta-alanine, its salts or esters. Thus, readily available, pure, crystalline, non-hygroscopic amides of alpha, gamma-dihydroxy-beta, beta-dimethylbutyric acid react to form N-(alpha, gamma-dihydroxy-beta, beta-dimethylbutyryl)-beta-alanine or pantothenic acid. The reaction takes place with gentle warming perferably in solvents such as alcohols. The course of the reaction may be readily followed by titrating the ammonia or amine which is evolved. (Author)

Annoni, Sandro.
ORAL ADMINISTRATION OF COLIMYCIN IN GASTROENTERITIS [La Colimicina per Os nelle Gastroenteriti]. [1963] 1p.
Order from SLA $1.10 63-14899

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4513.

DESCRIPTORS: *Colimycin, Diseases, Antibiotics, Drugs, *Gastrointestinal system, Communicable diseases, Therapy.

Arrighi, Cleto.
CAP FOR GLASS TUBES ADAPTED TO CONTAIN TABLETS OR THE LIKE, tr. by F. H. B. 5 Apr 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-19277

Trans. of Italian patent 460,863, cl. XVIII appl. 22 Nov 49, granted 21 Dec 50, printed May 51.

DESCRIPTORS: *Seals (Stoppers), Glass, Containers, *Locking fastner devices.

The invention involves a cap for closing glass tubes adapted to contain tablets or the like, characterized in that internal projections are provided on the sides of the cap, which projections press elastically against the glass tube and thus strongly adhere thereto, notwithstanding the normal diameter tolerances of the tubes. The projections consist of strips provided in the cover by cutting and projecting toward the top of the tube. (Author)

Batuev, A. S.
THE EFFECT OF CHLORPROMAZINE ON THE REFLECTION OF LIGHT AND SOUND STIMULI IN THE EEG OF THE FRONTAL CORTEX IN THE RABBIT. [1963] [14]p. 29 refs. FASEB manuscript no. S 273-2.
Order from OTS or SLA $1.60 63-19391

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 9, p. 1010-1016.

DESCRIPTORS: *Chlorpromazine, Reflection, *Light, *Sound, Electroencephalography, *Cerebral cortex, Rabbits, Brain, Stimulation.

Injection of chlorpromazine into a rabbit in a dose of 3-5 mg/kg leads to suppression of the changes in the EEG of the frontal region of the cortex in response to a sound stimulus, while preserving those in response to a light stimulus. During the action of chlorpromazine, flashes of light cause assimilation of the rhythm in the frontal and occipital zones of the cortex. Under these circumstances the range of assimilation of the rhythm in the occipital region is extended towards the high frequencies -- to 24 flashes per second, while in the frontal region it lies between 4 and 8 flashes per second. (Author)

Benagiano, A. and Capozzi, L.
COLIMYCIN IN ENDODONTITIS [La Colimicina in Endodontia]. [1963] 2p.
Order from SLA $1.10 63-14754

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4537-4538.

DESCRIPTORS: *Colimycin, Dentistry, *Teeth, Communicable diseases, Drugs, Antibiotics.

Biancalana, L., Varola, F., and Somaglino, W.
OUR EXPERIENCES ON THE EFFICACY OF COLIMYCIN THERAPY IN POST-OPERATIVE TREATMENT OF ACUTE APPENDICITIS [La Nostra Esperienza sulla Efficacia della Colimicina nel Trattamento Post-Operatorio dell'Appendicite Acuta]. [1963] 6p. 33 refs.
Order from SLA $1.10 63-14761

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4476-4479.

DESCRIPTORS: *Colimycin, Therapy, *Surgery, Gastrointestinal system, Antibiotics, Drugs.

Bochi, A.
IODOXYCHLOROQUINOLEINE-PHENANTHROLINE QUINONE COMBINATION IN THERAPY OF DIARRHEAS (Asociacion Yodoxicloroquinoleina/Fenantrolinquinona en el Tratemiento de las Diarreas). [1962] 7p. 5 refs.
Order from SLA $1.10 63-10662

Trans. of Sem[ana] Méd[ica] (Argentina) 1961, v. 119, 5 Oct, p. 1171-1174.

DESCRIPTORS: Drugs, *Quinolines, *Quinones, Therapy, *Intestinal bacteria, Antibiotics, Diseases, Gastrointestinal system, *Intestines, Toxicity, Chemotherapeutic agents.

The results obtained in 60 patients treated with a new combination of antidiarrheal drugs are reported. The preparation consists of phenanthroline quinone, iodoxychloroquinoleine and oxyphenonium bromide. In 80% of the patients treated, complete success was obtained in only 3 days of treatment with a total of 10 tablets. In 10 of the remaining patients a partial success was obtained, with incomplete remission of the symptoms and persistence of pasty stools after the 3 days. In the 2 remaining patients it was necessary to stop medication because of the appearance of allergic phenomena probably due to previous alimentation. (Author)

Borsotti, P. C. and Marconi, R.
CONSIDERATIONS ON THE CHOICE OF AN ANTIBIOTIC IN SURGICAL PRACTICE [Considerazioni sulla Scelta dell'Antibiotico nella Pratica Chirurgica]. [1963] 2p.
Order from SLA $1.10 63-14755

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4516-4518.

DESCRIPTORS: *Antibiotics, Drugs, *Surgery, Penicillins, Streptomycins, *Colimycin.

Brazhnikova, M. G., Kudinova, M. K. and others.
ISOLATION OF MONOMYCIN AND ITS PROPERTIES. 27 June 62 [6]p. 7 refs. NIH no. 6-52-62.
Order from OTS or SLA $1.10 62-32144

Trans. of #Antibiotiki (USSR) 1960, v. 5, no. 4, p. 6-10.

DESCRIPTORS: *Antibiotics, Biological products, Drugs, Production, Chemical analysis, *Neomycins, Chromatographic analysis.

A hydrophilous basic antibiotic, monomycin, has been isolated by the method of adsorption on a kation exchanger KB4-P2, with subsequent elution with 1 N ammonia. A preparation of high purity (800 - 1000 γ of the pure base in 1 mg of the preparation) is thus obtained. A comparative chromatographic examination of neomycin, canamycin and monomycin in the systems: butanol-pyridine-acetic acid-water and propanol-pyridine-acetic acid-water (15 : 10 : 3 : 12) revealed a clear-cut difference between monomycin, and the two other antibiotics. As a result of chromatography of the products of 16-hour hydrolysis, 2-desoxystreptamine, a breakdown product common to each of them, could be identified. (Author)

Brockmüller, Arnold.
CONCERNING THE TREATMENT OF DIABETIC ACIDOSIS WITH SUCCINIC ACID. [1963] 6p. 6 refs.
Order from SLA $1.10 63-14545

Trans. of Münchener Medizinische Wochenschrift (Germany) 1938, v. 85, p. 252-253.

DESCRIPTORS: *Diabetes, Therapy, Drugs, *Acidosis, *Succinic acids.

Brunetti, Mario and Ferrera, Ugo.
PSEUDOMONAS AERUGINOSA MENINGITIS (Le Meningiti da Pseudomonas Aeruginosa). [1963] 8p. 20 refs.
Order from SLA $1.10 63-14764

Trans. of Minerva Med[ica] (Italy) 1962, v. 53, p. 1673-1676.

DESCRIPTORS: *Pseudomonas, *Meningitis, Drugs, Etiology, *Colimycin, Antibiotics, Injection (Medicine), Meninges, Communicable diseases.

Brunetti, F. and Coassolo, M.
USE OF COLIMYCIN IN OTORHINOLARYNGOLOGY [L'Impiego della Colimicina in Campo Otorinolaringologico]. [1963] 3p. 19 refs.
Order from SLA $1.10 63-14896

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4533-4534.

DESCRIPTORS: *Colimycin, Drugs, Antibiotics, Therapy, *Otorhinolaryngology, Surgery, Otitis, Sinusitis, Larynx.

Büssow, H.
COMPARISON OF THE EFFECT OF TWO GLUTARIMIDES IN NEUROLEPTIC CONDITIONS (Vergleich der Wirkung Zweier Glutarimide bei Neuroleptischen Zustanden). [1962] 5p. 6 refs.
Order from SLA $1.10 63-10594

Trans. of Med[icina] Exp[erimentalis] (Switzerland) 1962, v. 6 [no. 2] p. 113-117.

DESCRIPTORS: Glutaric acids, Amides, *Doriden, Drugs, *Autonomic agents, *Psychoanaleptic agents.

It was found that a glutarimide (N-methyl-α-phenyl-α-ethyl-glutarimide) with little or no anticholinergic action had no effect on mood in a psychosis previously treated with neuroleptics, whereas Doriden, which has an anticholinergic action, was strikingly effective in altering the mood in the great majority of cases within a short time. This suggests that influences acting upon the centers responsible for central autonomic control play a significant part in the therapeutically desirable modification of the psychotic condition. Our findings indicate that an effect of glutethimide on central parasympathetic substrates in man must be considered, which is to be distinguished from the peripheral parasympatholytic action seen experimentally in animals. (Author)

Czok, G.
STIMULANTS OF THE CENTRAL NERVOUS SYSTEM IN COFFEE. [1963] 4p.
Order from ATS $6.00 ATS-24Q70G

Trans. of Med[izin] u[nd] Ernährung (West Germany) 1961, v. 2, no. 10, p. 229-230.

DESCRIPTORS: *CNS stimulants, *Coffee

Davakis, I., Samaras, E., and Patsilinakos, P.
THE CONTRIBUTION OF COLIMYCIN TO THE TREATMENT OF INFANT TOXICOSES. [1963] 9p. 7 refs.
Order from SLA $1.10 63-16532

Trans. of Hellen[ike] Iatr[ike] (Greece) 1961, v. 30 [no. 7] p. 957-962.

DESCRIPTORS: *Colimycin, *Antibiotics, Infants, *Gastrointestinal system, Infections, Toxicity.

The authors present 20 cases of severe infantile gastroenteritis (toxicosis) treated with colimycin alone or in combination with polymyxin with very satisfactory results and they conclude that at present colimycin is the most effective antibiotic against severe infantile gastrointestinal infections. (Author)

Dzheksenbaev, O. Sh. and Ozeretskovskii, N. A.
PHARMACOLOGICAL PROPERTIES OF THE ANTIBIOTIC AURANTIN. 22 June 62 [6]p. 6 refs. NIH no. 6-47-62.
Order from OTS or SLA $1.10 62-32140

Trans. of #Antibiotiki (USSR) 1961, v. 6, no. 12, p. 1070-1073.

DESCRIPTORS: Drugs, *Antibiotics, *Streptomycins, *Antineoplastic agents, *Toxicity, Dosage, Laboratory animals, Tolerances (Physiology), Allergy, Autonomic nervous system, Blood pressure, Respiration, Biological products

A study was made of a new antitumor antibiotic-aurantin-of the actinomycins group. The LD_{50} of the drug when administered intravenously, was: 1,600 γ for mice, 500 γ for rats and 300 γ/kg of body weight for rabbits. The latter demonstrated a good tolerance of aurantin which was administered intravenously thrice weekly in the dose of 50 γ/kg of body weight. Aurantin was not active with regard to the elements of the vegetative nervous system, it caused no changes in the smooth muscles of the intestine and uterus in guinea pigs and had no effect on the sensitivity of those organs to histamine and acetylcholine. Prolonged administration of aurantin failed to alter the clinical course of the active anaphilactic shock in guinea pigs. (Author)

Dzhurov, G.
CLINICAL RESULTS OF THE APPLICATION OF THE BULGARIAN ANTITUBERCULOUS DRUG NO. 17. [1963] 9p.
Order from ATS $13.75 ATS-97Q66B

Trans. of Suvremenna Med[itsina] (Bulgaria) 1961, v. 12, no. 1, p. 51-61.
Another trans. is available from OTS or SLA $1.60 as 62-19659, JPRS-12094, 24 Jan 62 [16]p.

DESCRIPTORS: *Tuberculosis, Drugs, Chemotherapeutic agents, *Isoniazid, Therapy, Toxicity, Bulgaria, *Hydrazines.

For abstract see Technical Translations 8: 115, 1963.

Eberhardt, H. and Freundt, K. J.
USE OF THIN LAYER CHROMATOGRAPHY IN TOXICOLOGICAL-FORENSIC DETECTION OF HYPNOTICS (Die Anwendung der Dünnschichtchromatographie beim Toxikologisch-forensischen Schlafmittelnachweis). Apr 63, 2p. 6 refs.
Order from SLA $1.10 63-16341

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie und Pharmakologie] (West Germany) 1962, v. 243, p. 310-311.

DESCRIPTORS: *Hypnotics and sedatives, Thin films, Chromatographic analysis, Toxicity.

Fedorov, N. A.
THE FATE OF TWO PHENOTHIAZINE DERIVATIVES: AMINAZINE S^{35} AND PROMAZINE S^{35} IN THE ORGANISM INVESTIGATED BY THE LABELED ATOM METHOD (Izuchenie Metodom Mechenykh Atomov Sud'by v Organizme Dvukh Proizvodnykh Fenotiazina: S^{35} Aminazine i S^{35} Promazina) tr. by Wanda M. Feeley. Aug 60 [20]p. PSC no. 58-1515.
Order from OTS or SLA $1.60 62-24327

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1958, v. 58 [no. 2] p. 137-149.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 59-17732 [1959] [23]p.

DESCRIPTORS: *Tracer studies, Drugs, *Chlorpromazine, *Phenothiazine derivatives, Psychotropic agents.

The distribution of aminazine (chloropromazine) S^{35} and of promazine S^{35} in the tissues of rats, dogs, white mice, and rabbits were compared. The distribution of the 2 drugs are basically the same on intravenous administration. In arterial and venous administration, the concentration of the drugs in the lungs is 10-30 times higher than in other organs. Accumulation of the

drugs in sections of the central nervous system are essentially the same. Up to 50% of a single dose of the drug is excreted during the first 24 hours after administration by all methods. When given by mouth aminazine S^{35} is excreted more slowly than promazine S^{35}. With a daily subcutaneous dose of aminazine S^{35} in rats, not more than 45-50% of a single daily dose is excreted in the urine and feces; this indicated the accumulation of aminazine S^{35} or its metabolites. The chromatographic tests of urine from rats, administered aminazine S^{35} and promazine S^{35} intraperitoneally and subcutaneously, indicate that about a half of the drug is excreted in the urine in an unchanged form. The absence of a chlorine atom in the second position on the phenothiazine radical (promazine) does not change the basic picture of its distribution in the organism as compared with aminazine.

Fleury, Paul; Courtois, Jean, and Wickström, Ay.
ACTION OF PERIODIC ACID ON GLUCONIC ACID. I. STUDY OF THE REACTION, APPLICATION TO THE ASSAY OF CALCIUM GLUCONATE IN THE ABSENCE OF OTHER COMPOUNDS (Action de l'Acide Periodique sur l'acide Gluconique. I. Étude de la Réaction Application au Dosage du Gluconate de Calcium en l'absence d'autres Corps). [1963] [24]p. (foreign text included) 18 refs.
Order from SLA $2.60 63-14049

Trans. of Ann[ales] Pharm[aceutiques] Franc[aises] 1948, v. 6, p. 338-347.

DESCRIPTORS: *Iodic acid, Chemical reactions, Oxidation, Drugs, Electrolytes (Phsyiology), *Calcium compounds, Chemical analysis, Formaldehyde, Formic acids, Carbon dioxide.

One molecule of gluconic acid reduces, after 2 hours of contact at + 36° C, five molecules of periodic acid; One molecule of formaldehyde is formed, four molecules of formic acid, and one of carbon dioxide. It is possible this way to determine gluconic acid by a practical, precise, regular and rather selective method. It is suggested that to check the purity of officinal calcium gluconate, both its calcium and its gluconic acid content be determined. (Author)

Forni, P. V.
SELIGMANN'S PHENOMENON AND COLIMYCIN. I. [CHRONOBIOLOGY] [Fenomeno di Seligmann e Colimicina. I. Cronobiosi]. [1963] 2p.
Order from SLA $1.10 63-14759

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4540-4541.

DESCRIPTORS: *Colimycin, *Antibiotics, Drugs, Biological assay, Therapy, Communicable diseases.

Franck, R. A.
USE OF THE COMBINATION PHENANTHROLINE-QUINONE PLUS IODOHYDROXYCHLOROQUINOLINE IN THE TREATMENT OF TENIASIS (Empleo de la Combinacion Fenantrolin-Quinona Mas Iodoxicloroquinoleina en el Tratamiento de la Teniasis). Oct 62, 4p.
Order from SLA $1.10 63-10098

Trans. of el Dia Medico (Argentina) 1962 [v. 34] 15 Mar, p. 288-290.

DESCRIPTORS: Drugs, *Quinolines, *Quinones, Therapy, *Platyhelminths, Parasites, *Worms, Intestines, Antibiotics, Chemotherapeutic agents.

Frolov, V. A.
THE EFFECT OF ANAPHYLACTIC SHOCK ON PRECIPITIN PRODUCTION. II. THE EFFECT OF DRUGS ACTING ON THE NERVOUS SYSTEM DURING ANAPHYLACTIC SHOCK ON IMMUNOGENESIS. [1963] [9]p. 16 refs. FASEB manuscript no. S 224-2.
Order from OTS or SLA $1.10 63-19385

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962 [v. 33] no. 2, p. 41-45.

DESCRIPTORS: *Anaphylactic shock, *Allergy, Antigens and antibodies, Drugs, *Nervous system, *Immunity, Ethers, *Anesthesia, Barbiturates, Titration.

Deep ether anesthesia alleviated the course of anaphylactic shock, hexobarbital anesthesia aggravated it, and azamethone had to effect on its course. The titer of precipitins to the sensitizing and immunizing antigens in animals subjected to anaphylactic shock during narcosis varied in just the same way as in animals subjected to anaphylactic shock in normal conditions. (Author)

Gastaldi, Franco and Piovella, Carlo.
INTESTINAL FLORA SEPTICEMIA AFTER PROLONGED COLIMYCIN THERAPY. [1963] 1p.
Order from SLA $1.10 63-14762

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97, p. 4512].

DESCRIPTORS: Bacteria, *Intestines, Therapy, *Colimycin, Antibiotics, Drugs, Communicable diseases.

Gauze, G. F., Preobrazhenskaya, T. P. and others.
THE PRODUCTION OF MONOMYCIN: A NEW ANTIBIOTIC BY THE CULTURE OF ACTINOMYCES CIRCULATUS VAR. MONOMYCINI (Obrazovanie Novogo Antibiotika Monomitsina Kul'turoi Actinomyces Circulatus Var. Monomycini). 26 June 62, 5p. 1 refs. NIH no. 6-51-62.
Order from OTS or SLA $1.10 62-32143

Trans. of #Antibiotiki (USSR) 1960, v. 5, no. 4, p. 3-6.

DESCRIPTORS: *Antibiotics, Production, Drugs, *Neomycins, Fungi, *Actinomyces, *Culture media, Morphology, Biological products.

The producer of the new antibiotic monomycin has spiral sporangia which are arranged like "chocolate sticks." It is described in the present report as a new variety, Actinomyces circulatus monomycini. The producer of monomycin is very inconstant. Colonies possessing aerial mycelium are active in an antiobiotic respect, wheras colonies devoid of aerial mycelium

produce almost no antibiotic at all. Active lines are constantly splitting off inactive variants and, hence, the producer of monomycin requires continual selection for preservation of the high antibiotic activity of the strain. In experiments in flasks that are being shaken the antibiotic reaches concentrations of 200-300 gammas/ml. on the fourth day of growth in nutritive medium containing flour and glucose. (Author)

Girod, C.
ACTION OF DESACETYL-N-METHYLCOLCHICINE ON HEMATOPOIESIS OF MONKEYS (Action de la Désacétyl-N-Méthylcolchicine sur l'Hématopoièse du Singe). [1963] 5p.
Order from SLA $1.10 63-16342

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1959, v. 153, p. 314-318.

DESCRIPTORS: *Alkaloids, Drugs, *Hemopoiesis, *Primates, *Blood disorders, Acetyl radicals, Methyl radicals.

Parenteral administration of desacetyl-N-methylcolchicine in monkeys produces: (1). With a single injection (1 mg. /Kg.) a hyperleukocytosis with neutrophilicpolynucleosis and eosinopenia; (2) with repeated injections, a leukopenia and neutropenia with reduction of the medullary activity affecting only the granulocytes, and less pronounced on the erythrocytes. (Author)

Goldberg, A.
PREPARATION OF SOME 5-BENZYL PYRIMIDINES. 30 Aug 58, 10p. 6 refs.
Order from SLA $1.10 63-14042

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1951, 17 Apr, p. 895-899.

DESCRIPTORS: Drugs, *Pyrmidines, *Benzyl radicals Synthesis (Chemical), Chlorination, Alkoxy radicals, Ammonia, *Amines. Chemical reactions.

Grupe, G.
EXPERIENCES AND OBSERVATIONS WITH THE FLUOR PREPARATION "SEPTOFLUOR": SPECIFICATIONS (Erfahrungen und Beobachtungen mit dem Fluor-Präparat "Septofluor"). [1963] [4]p. (foreign text included).
Order from SLA $1.10 63-14958

Trans. of mono. (letter) to the Chemical Pharmaceutical Plant, Otto Müller, Berlin/Charlottenburg, 5 Apr 62.

DESCRIPTORS: Fluorine, *Drugs, *Chemotherapeutic agents, Decontamination.

Guasardo, Giovani.
COLISTIN IN PEDIATRICS (Colistan en Pediatria). [1963] 2p.
Order from SLA $1.10 63-16524

Trans. of Prensa Med[ica] Mex[icana] 1961, v. 26, 30 June, p. 289.

DESCRIPTORS: *Colimycin, *Pediatrics, Drugs, Antibiotics.

Guasardo, G[iovani].
USE OF COLISTIN IN PEDIATRICS (Uso del Colistin en Pediatria). [1963] 3p.
Order from SLA $1.10 63-16523

Trans. of Med[icina]; Rev[ista] Mexicana, 1961, v. 41, 25 Apr, p. 190-191.

DESCRIPTORS: *Colimycin, *Pediatrics, Drugs, Antibiotics.

(See also 63-16524)

Heilmeyer, L. and Wöhler, F.
MODERN PROBLEMS OF HEMOCHROMATOSIS WITH PARTICULAR CONSIDERATION OF DESFERRIOXAMINE THERAPY (Moderne Hämochromatoseprobleme mit Besondered Berücksichtigung der Desferrioxaminbehandlung). [1963] 15p. 58 refs.
Order from SLA $1.60 63-16343

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1962, v. 87, 28 Dec, p. 2661-2667.

DESCRIPTORS: *Hemochromatosis, Drugs, Therapy, *Iron compounds, *Oximes, Metabolism, Excretion, Urine, *Complex compounds, Chemotherapeutic agents.

A report is given on hemochromatoses in primary and secondary forms, whereby only the hereditary cases of hemochromatosis are considered as the primary form. Among the secondary hemochromatoses with known cause are diseases of the liver or liver damages predominate (alcohol abuse, hepatitis, chronic hunger states with chronic protein deficiency). Another form of hemochromatosis is transfusion hemosiderosis and the sideroachrestic anemias, with a so far unknown cause. The fundamental laws of intermediary iron metabolism regarding absorption are discussed. For cases of primary hereditary hemochromatosis and also for patients with hepatitis and liver cirrhosis a factor promoting iron absorption especially in the bile of these patients is discussed as the hypothetical cause of the development of iron storage; the pathogenesis of transfusion hemosideroses as a consequence of degradation and liberation of the hemoglobin iron seems considerably simpler. The formation of hemochromatosis in sideroachrestic anemias is considered. The important role of the transport function of transferrin for iron is mentioned. It was demonstrated that a hemochromatosis can develop also in atransferrinemia.

Ida, Tadao, Takahashi, Shoji and others.
ENTERIC COATING. 2. INTERNAL PLASTICIZED STYRENE-MALEIC ANHYDRIDE COPOLYMERS. Studies on Protective Coating, Rept. 14. 21 Jan 63, 5p. 3 refs.
Order from SLA $1.10 63-10677

Trans. of Yakugaku Kenkyu (Japan) 1962, v. 34, Feb, p. 39-43.

DESCRIPTORS: *Coatings, *Styrene plastics, *Maleic anhydride, Polymers, *Plasticizers, Solubility, *Viscosity.

It was shown that internal plasticized copolymers exhibit more suitable properties than any other enteric coating agents being used. Since they did not affect the solubility and disintegration qualities in digestive juice but added advantage of lowering viscosity to eliminate dusting powder in coating process to solve adhesion problem. Also, due to their low water vapor permeability, protection of pharmaceutical products from hydrolysis was shown to be greater than the original styrene-maleic anhydride enteric coating. (Author)

Vignolo-Lutati, U. and Galante, A. [M.]
COLIMYCIN PROPHYLAXIS AND THERAPY OF ENTERITIS IN THE NEWBORN [La Colimicina nella Terapia e Profilassi delle Enteriti del Neonato]. [1963] 2p.
Order from SLA $1.10 63-14897

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4532.

DESCRIPTORS: *Colimycin, Inhibition, *Infants, Communicable diseases, Drugs, *Gastrointestinal system, Antibiotics, Therapy.

Kuznetsov, Sergei Georgievich and Golikov, Sergei Nikolaevich.
SYNTHETIC ATROPINE-LIKE SUBSTANCES. 19 June 63, 424p. 238 refs. JPRS: 19757.
Order from OTS $6.00 63-31078

Trans. of mono. Sinteticheskie Atropinopodobnye Veshchestva, Leningrad, 1962, 224p.

DESCRIPTORS: Synthesis (Chemical), Drugs, *Atropine, *Antispasmotic agents, *Parasympatholytic agents, *CNS depressants, Chemical analysis, *Ulcers, *Ophthamology, Diseases, Nervous system, Amines, Amides, Nitriles, Alcohols.

This book surveys the literature on the chemistry and pharmacology of synthetic atropine-like substances. It includes the chemical structure and pharmacologic action of numerous substances of this kind as well as some information on their clinical use. Considerable attention is paid to modern ideas on their mechanism of action. The book is designed chiefly for pharmacologists and synthetic chemists, but it may also be of interest to physicians and pharmacists. (Soviet publisher's note)

Lapin, I. P., Khaunina, R. A., Shchelkunov, E. L.
INFLUENCE OF IMIPRAMINE (TOFRANIL) ON THE EFFECTS OF EPINEPHRINE-NOREPINEPHRINE AND AMPHETAMINE. [1963] [18]p. 18 refs. FASEB manuscript no. S 235-2.
Order from OTS or SLA $1.60 63-19388

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1962, v. 62, no. 2, p. 183-189.

DESCRIPTORS: *Epinephrine, *Amphetamines, Toxicity, Drugs, Pharmacology, Sympathomimetic agents.

The influence of imipramine on the effects of epinephrine and norepinephrine was studied with respect to blood pressure in cats; contraction of the nictitating membrane; the adrenolytic action of chlorpromazine; blood pressure in rabbits; blood vessels of the isolated rabbit ear; frog vascular preparations; and frog hearts isolated by the Straub method. The influence of imipramine on the central effects of amphetamine was determined by means of studies on food conditioned reflexes of rats in a maze, and on the group toxicity of amphetamine.

Lippi, M. and Stocchi, F.
COLIMYCIN IN GASTRO-INTESTINAL INFECTIONS (A STUDY OF BACTERIAL FLORA MODIFICATION). [1963] 1p.
Order from SLA $1.10 63-14763

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4515.

DESCRIPTORS: *Colimycin, *Communicable diseases, *Gastrointestinal system, Antibiotics, Drugs, Therapy, Bacteria.

A clinical investigation was carried out on some patients affected by various contagious forms of gastro-intestinal disorders. The clinical study was based on the condition of the patient with particular reference to the number and fecal composition, to the symptomology, to the fever and general conditions. The bacteriological study was based on the coli count, of the eventual staphylococci and of the enterococci. The study was based on the actual count before the onset of therapy and then on the daily changes and of the bacterial flora composition resulting from the therapy. (Report quoted in its entirety)

Mattia, R. de.
COLIMYCIN IN THE TREATMENT OF PERTUSSIS [La Colimicina nel Trattamento della Pertosse]. [1963] 3p. 10 refs.
Order from SLA $1.10 63-14758

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4511-4512.

DESCRIPTORS: *Colimycin, Therapy, Drugs, *Whooping cough, Antibiotics.

Moiraghi-Ruggenini, A.
COLIMYCIN-TETRACYCLINE INTERACTION IN EXPERIMENTAL INFECTIONS [Interazione Colimicina-Tetracicline nelle Infezioni Sperimentali]. [1963] 3p.
Order from SLA $1.10 63-14895

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4542.

DESCRIPTORS: *Colimycin, *Tetracylines, *Communicable diseases, Biological assay, Drugs, Staphylococcus, Salmonella, Klebsiella, Therapy.

It can be inferred that the association between colimycin and tetracycline in all the cases tested, a positive interaction has been demonstrated, even when more moderate doses of the two antibiotics were used and higher infecting doses employed. (Author)

Pandolfi, C.
ACTION OF COLIMYCIN ON DYSMICROBISM IN VARIOUS GASTROENTERITIS SYNDROMES [L'Azione della Colimicina sul Dismicrobismo di Alcune Sindromi Gastroenteriche]. [1963] 2p.
Order from SLA $1.10 63-14760

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4513-4514.

DESCRIPTORS: *Colimycin, Drugs, Antibiotics, *Gastrointestional system, Diseases, *Enterobacteriaceae, *Staphylococcus.

Pribil, Rudolf; Cohalik, J. and others.
COMPLEXOMETRIC TITRATION IN PHARMACEUTICAL ANALYSIS. I. DETERMINATION OF MERCURY. [1963] 12p. (figs. footnotes tables omitted).
Order from SLA $1.60 63-14239

Trans. of Ceskoslov[enska] Farm[acie] 1953, v. 3, p. 38-43.

DESCRIPTORS: *Mercury, *Titration, Chemical analysis, Pharmacology, Mercury compounds, Chlorides, Oxides, Acids, Diuretics, Determination.

A complexometric method has been worked out for the determination of mercury in tablets with mercuric chloride, mercuric oxide, ointment with yellow mercuric oxide, mercurisalicylic acid anhydride and some diuretics containing mercury, such as Novurit injections. The principle of this method is based on the conversion of mercury to a solid complex by use of an excess of the disodium salt solution of ethylene diamine tetracetic acid (Complexone III), and the determination of the amount of Complexone III unconsumed for binding mercury by means of volumetric solution of zinc sulfate using eriochrome black T as indicator. (Author)

Rissel, E. and Schnack, H.
EXPERIENCE WITH A NEW IRON COMPLEX FORMER, DESFERRIOXAMINE (Erfahrungen mi. Einem Neuen Eisen-Komplexbildner, Desferrioxamin). Feb 63 8p. 7 refs.
Order from SLA $1.10 63-14722

Trans. of Wien[er] Klin[ische] W[ochenschrift] (Austria) 1962, v. 74, 31 Aug, p. 577-580.

DESCRIPTORS: Diseases, Metabolism, *Drugs, Complex compounds, *Oximes, Therapy, *Hemochromatosis, *Amines, *Iron compounds, Chemotherapeutic agents.

Topel'berg, V. M.
THE ACTION OF ANTIBIOTICS AND SULFANILAMIDES ON TRANSAMINASE IN ANIMAL TISSUES. [1963] 3p.
Order from ATS $5.00 ATS-59Q69R

Trans. of #Antibiotiki (USSR) 1960, v. 5, no. 2, p. 83-85.

DESCRIPTORS: Tissues (Biology), Tissue extracts, *Antibiotics, Sulfamide, *Transaminases, *Sulfonamides.

Vacek, A.
CHANGES IN THE GAS EXCHANGE IN RATS AFTER INTRAPERITONEAL INJECTION OF CYSTEINE AND CYSTEAMINE. [1963] [9]p. 15 refs. FASEB manuscript no. S 164-2.
Order from OTS or SLA $1.10 63-19375

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 7, p. 57-62.

DESCRIPTORS: Gases, Rats, Peritoneum, Injection (Medicine), *Cysteine, *Cysteinamines, *Radioprotective agents, Metabolism, *Oxygen.

It is shown that the internal milieu of biological objects exposed to irradiation is disturbed after administration of cysteine and cysteamine. The metabolic processes are intensified and the CO_2 excretion and the RQ are increased. It is evident that the direct part played by the oxygen demand in the mechanism of the protective action of cysteine and cysteamine is very small; the latter is not the result of the specific action of these two substances but is primarily the reflection of the nonspecific reactions arising in the animal organism after the administration of cysteine and cysteamine. (Author)

Valenti, S., Palma, M. de and others.
MICROBIOLOGIC STUDIES ON COLIMYCIN WITH THE ELECTRON MICROSCOPE AND THE WARBURG MANOMETER [Studio Microbiologico sulla Colimicina al Microscopio Ellettronico ed al Manometro di Warburg]. [1963] 11p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-14757

Trans. of Minerva Med[ica] (Italy) 1958, v. 49 [no. 97] p. 4498-4504.

DESCRIPTORS: Microorganisms, *Colimycin, Drugs, Antibiotics, *Electron microscopy, *Manometers, Oxygen consumption, Staphylococcus, Escherichia.

Radiobiology

SOVIET STUDIES OF RADIATION SICKNESS. 2 July 63, 18p. 3 refs. JPRS: 19996.
Order from OTS $0.50 63-31186

Trans. of Meditsinskaya Radiologiya (USSR) 1963, v. 8, no. 4, p. 81-92.

DESCRIPTORS: *Radiation sickness, Mice, *Ultraviolet radiation, *Radioactive isotopes, Radon, Xenon, Diagnosis, Neoplasms, *Spinal cord, Pathology, Health physics, Therapy, *Radiation injuries, Radioprotective agents.

Contents:
Tests of tryptamine (3-beta-aminoethylindole hydrochloride) for acute radiation sickness in mice, by V. V. Antipov
The effect of ultraviolet radiation on the course of radiation sickness, by V. D. Abdullaev
Isotopic myelography, by N. K. Muratkhodzhaev (review of mono. Izotopnaya Mielografiya, Moscow, 1962, by F. M. Lyass)
Conference on Problems of the Pathogenesis, Experimental Prophylaxis and Therapy of Radiation Injury [Nov 62] by O. V. Popov.

Akoev, I. G. and Lagun, M. A.
LOWERING THE IMMUNOBIOLOGICAL RESISTANCE OF THE ORGANISM AS A MANIFESTATION OF THE IRREVERSIBLE COMPONENT OF RADIATION SICKNESS. 13 May 63, 10p. 11 refs. JPRS: 19152.
Order from OTS $0.50 63-21805

Trans. of Meditsinskaya Radiologiya (USSR) 1963, v. 8, no. 2, p. 47-50.

DESCRIPTORS: *Immunity, Adaptation (Physiology), *Radiation sickness, Healing, *Toxins and antitoxins, Tolerances (Physiology).

Kerkis, Yu. Ya.
RADIATION AS ONE OF THE POSSIBLE CAUSES OF CARCINOGENESIS. 9 May 63, 23p. 108 refs. JPRS: 19131.
Order from OTS $0.75 63-21796

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 10, p. 125-138.

DESCRIPTORS: *Radiation effects, Etiology, *Cancer.

The task of the present article is an analysis of the basic experimental data and considerations which justify the right and timeliness of posing the problem of radiation as one of the possible causes of carcinogenesis.

Knizhnikov, V. A. and Bugryshev, P. F.
EFFECT OF MICROQUANTITIES OF STABLE STRONTIUM ON MINERAL METABOLISM AND UPTAKE OF SR^{90}. 10 June 63, 12p. 7 refs. JPRS: 19626.
Order from OTS $0.50 63-31020

Trans. of Gigiena i Sanitariya (USSR) 1963, v. 28, no. 2, p. 19-25.

DESCRIPTORS: *Metabolism, *Strontium, *Radioactive isotopes, Tracer studies, Absorption (Biological), Radioprotective agents.

The prolonged supplementary administration of microquantities of stable strontium reduced the accumulation of Sr^{90} and Ca^{45} in the rat skeleton by 1/4 or 1/3. The reduction in the accumulation of these radioisotopes in the skeleton following the consumption of increased amounts of stable strontium does not seem to be the result of "dilution"or "competition" but a manifestation of a change in mineral metabolism. The changes in mineral metabolism and the inferior body weight of rats was also induced by the action of drinking warer with relatively small concentrations of stable strontium such as are encountered in natural water. (Author)

Prpic, Branko; Despotovic, Jerka, and Cerovac, Hrvoje.
IONIZATION RADIATION IN CROATIAN INDUSTRY. 4 June 63, 8p. 5 refs. JPRS: 19545.
Order from OTS $0.50 63-21974

Trans. of Tehnika (Yugoslavia) 1963 [v. 18] no. 4, p. 779-782.

DESCRIPTORS: *Ionization, *Radiation hazards, *Radiography, Dosimeters, Health physics, Industrial training, Industrial medicine.

The present state of industrial applications of ionizing radiations in Croatia is reported. Only the sealted radioactive sources and X-rays units are used. About fifty workers are exposed to ionizing radiation in industry, the average individual dose being about 600 mrem per year. The principles of radiological protection in industry are reviewed and the importance of the integrity of the physical, technical and medical survey is discussed. The attention is called to the probable extensive applications in near future. (Author)

Surgery

Abrikosova, M. A.
THE HEMODYNAMIC EFFECT OF THE SURGICAL TREATMENT OF PATENT DUCTUS ARTERIOSUS. [1963] [11]p. 8 refs. FASEB manuscript no. S 90-2.
Order from OTS or SLA $1.60 63-19367

Trans. of Khirurgiya (USSR) 1962, v. 38, no. 1, p. 45-50.

DESCRIPTORS: Surgery, *Blood vessels, Heart, Cardiovascular system, *Blood circulation, Elasticity, Blood pressure, Arteries, Congenital anomalies.

Surgical treatment of a patent ductus arteriosus returns the systolic activity of the left ventricle to normal. Its mechanical work, particularly its kinetic component decreases. Ventricular stroke volume also decreases. Ligation of a PDA normalizes circulation in the large blood vessels. Simultaneously, the linear velocity of blood circulation is diminished; and peripheral resistance, arterial tonus, and pulse wave velocity are increased. Normalization of peripheral resistance together with a decrease in stroke volume, brings about a normalization of arterial pressure. The study of basic hemodynamic values enables one to evaluate objectively the effectiveness of surgical treatment of a patent ductus arteriosus. (Author)

Boselli, P. L.
PERFORATION OF ACUTE SIMPLE ULCER OF THE DESCENDING COLON. [1963] 15p.
Order from SLA $1.60 63-14771

Trans. of Minerva Chir[urgica] (Italy) 1960, v. 15, p. 347-351.

DESCRIPTORS: *Ulcers, *Intestines, Surgery, Rupture, Etiology, Excision.

Schmauss, A. K.
PATHOGENESIS, CLINIC AND THERAPY OF ACUTE PANCREATITIS FOLLOWING GASTRECTOMY (Pathogenese, Klinik und Therapie der nach Ulcusresektionen Auftretenden Akuten Pankreatitis). [1963] 5p.
Order from SLA $1.10 63-16389

Trans. of Fortschritte der Medizin (West Germany) 1959, v. 77, 1 Apr, p. 181-182.

DESCRIPTORS: *Pancreas, *Inflammation, *Gastrointestinal system, Excision, Diagnosis, Therapy.

Sulima, S. Ya.
EFFECT OF GASTRIC RESECTION ON THE COPPER, COBALT, AND IRON CONTENT OF THE BLOOD. [1963] [11]p. 6 refs. FASEB manuscript no. S 287-2.
Order from OTS or SLA $1.60 63-19366

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 8, p. 73-77.

DESCRIPTORS: *Gastrointestinal system, Surgery, *Blood, *Copper, *Cobalt, *Iron, Hematology, Metabolism, Anemia, *Ulcers.

A study was made of the dynamics of the iron, copper, and cobalt content of the blood in patients with gastric and duodenal ulcers, before, during, and at different times after surgery. Gastric resection was found to produce distinct changes in the amount of iron, copper, and cobalt in the blood. There was a definite correlation between the ensuing anemia and decreased content of these elements. Investigation of the blood after post-operative development of symptoms of agastric asthenia revealed a decrease in the iron, cobalt, and copper content. (Author)

Zoology

FISHING [ECONOMY] 1962 [VOL. 38] NO. 1: SELECTED ARTICLES. [June 63] 24p. (figs. omitted). JPRS: 19807.
Order from OTS $0.75 63-31096

Trans. of Rybnoe Khozyaistvo (USSR) 1963 [v. 38] no. 1, p. 9-13 and 26-36.

DESCRIPTORS: *Fisheries, Fishes, *Economics, Pacific Ocean, Baltic Sea, *Cod, Underwater sound equipment, Depth indicators, Echo ranging, Underwater cameras, *Behavior.

Contents:
Saury, by S. I. Apanovich
Quantitative assay of Baltic cod concentrations by means of a sonic depth finder, by K. I. Yudanov
Underwater observations of the behavior of the Caspian kilka, by I. V. Nikonorov.

ROTIFER NUTRITION AND MOLLUSK OVERGROWTHS ON HYDROELECTRIC STATION STRUCTURES. 7 May 63, 8p. 10 refs. JPRS: 19073.
Order from OTS $0.50 63-21761

Trans. of [Akademiya Nauk SSSR]. Institut Biologii Vodokhranilishch. Byulleten', 1962, no. 12, p. 17-20, 32-33.

DESCRIPTORS: Marine biology, Aquatic animals, Nutrition, *Mollusca, Tracer studies, Dams, *Algae, *Fouling, Hydroelectric power systems.

Contents:
A C^{14} study of the nutrition of the rotifers asplanchna, by Yu. I. Sorokin and E. D. Mordukhai-Boltovskaya
Distribution of Dreissena Polymorpha Pallas on the structures of the Volga Hydroelectric Power Plant imeni V. I. Lenin, by V. P. Mikheev.

ZOOLOGICAL JOURNAL, 1962, VOL. 41, NO. 1: [SELECTED] TRANSLATIONS. 27 June 63, 100p. 85 refs. JPRS: 19894.
Order from OTS $2.50 63-31138

Trans. of Zoologicheskii Zhurnal (USSR) 1962, v. 41, no. 1, p. I-III, 24-57, 85-91, 155-160.

DESCRIPTORS: *Animals, *Biology, Scientific research, Nylon, *Wastes (Industrial), Marine biology, *Crustacea, *Toxicity, Nutrition, Food, *Plankton, Sea water, Salinity, *Marine borers, Radioactive isotopes, Identification, *Lepidoptera, Oceanographic vessels, Oceanology, Indian ocean.

Contents:
Tasks of zoological science in light of the decisions of the 22d CPSU Congress
Effect of nylon production sewage on aquatic organisms, by N. S. Stroganov and L. V. Kolosova
The quantitative aspect of nutrition and fool selectivity in the plankton rotifer Brachionus Calyciflorus Pall, by L. A. Erman
Effect of sea water of decreased salinity and different temperatures on shipworm (Teredo Navalis L.) larvae, by R. K. Kudinova-Pasternak
The application of radioactive isotopes for marking moths of Hadena Sordida Skh, by S. V. Andreev and others
Zoological research on the 33d voyage of the expedition ship "Vityaz", by N. V. Parin

Birman, I. B.
NEW INFORMATION ON THE MARINE PERIOD OF LIFE AND THE MARINE FISHERY OF PACIFIC SALMON (Novye Dannye o Morskom Periode Zhizni i Morskom Promysle Tikhookeanskikh Lososei) tr. by R. E. Foerster. Dec 62 [14]p. FRBC Trans. Series no. 357.
Order from NRCC NRCC C-4195

Trans. of Akademiya Nauk SSSR. Ikhtiologicheskaya Komissiya. Trudy Soveshchanii, 1960, no. 10, p. 151-164.

DESCRIPTORS: Marine biology, Fishes, *Salmonidae, Pacific Ocean, Aquatic animals, Ecology.

Burkov, V. A.
THE HYDROLOGY OF THE KOMANDORSKY-KAMCHATKA REGION AND THE SALMON MIGRATIONS DURING THE SPRING AND SUMMER (Gidrologiya Komandoro-Kamchatskovo Raiona Migratsii Losesei v Vesenne-Letnee Vremya) tr. by R. E. Foerster. Dec 62 [9]p. 5 refs. FRBC Trans. Series no. 356.
Order from NRCC NRCC C-4198

Trans. of Akademiya Nauk SSSR. Ikhtiologicheskaya Komissiya. Trudy Soveshchanii, 1960, no. 10, p. 165-172.

DESCRIPTORS: Hydrology, Fishes, *Salmonidae, Marine biology, Aquatic animals, Ecology, *Rhythm (Biology), Pacific Ocean, Adaptation (Physiology).

In its hydrological features the Komandorsky-Kamchatka region is a part of the vast area of the Pacific Ocean, which embraces the Bering Sea and the expanse north of the Polar Front down the coast of Kamchatka and the Kurile Islands to Friz Strait. All this vast region is characterized by the same water structure. Changes in the oceanographic characteristics from spring to summer are determined mainly by the climatic factors (annual trend); in the inshore part these changes under the influence of the dry land are expressed more sharply. On the whole the hydrological conditions of the Komandorsky-Kamchatka area are distinguished by a comparative simplicity; moreover, the changes occurring during the various separate seasons are of a more complicated character and depend mainly on changes in the atmospheric circulation.

Gribanov, V. I.
THE COHO SALMON (ONCORHYNCHUS KISUTCH WALBAUM): A BIOLOGICAL SKETCH (Kizhuch (Oncorhynchus kisutch Walb.): Biologicheskii Ocherk) tr. by W. E. Ricker. 1962, 83p. 18 refs. FRBC Trans. Series no. 370.
Order from NRCC NRCC C-4212

Trans. of Tikhookeanskii N[auchno]-I[ssledovatel'skii] Institut Rybnogo Khozyaistva i Okeanografii. Izvestiya (USSR) 1948, v. 28, p. 43-101.

DESCRIPTORS: *Salmon, *Fishes, Fisheries, Growth, Ecology, *Morphology, Statistical data, Age, Body weight, Reproduction (Physiology).

Karpevich, A. F.
THE SIGNIFICANCE OF ABIOTIC AND BIOTIC FACTORS OF THE ENVIRONMENT DURING THE ACCLIMATIZATION OF WATER ORGANISMS. 19 June 63, 3p. JPRS: 19752.
Order from OTS $0.50 63-31077

Trans. of Voprosy Ekologii (USSR) 1963, no. 4, p. 32-34.

DESCRIPTORS: *Aquatic animals, *Marine biology, Reproduction, Ecology, Biophysics, Dams, Plants (Botany), *Adaptation (Physiology) Acclimatization.

Manuilova, E. F.
REPRODUCTION OF WATER FLEAS AS AFFECTED BY CONCENTRATION OF BACTERIA. 10 June 63, 6p. 4 refs. JPRS: 19630.
Order from OTS $0.50 63-31021

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 2, p. 32-35.

DESCRIPTORS: *Daphnia, *Reproduction, Water, Bacteria, Ecology, *Marine biology, Aquatic animals

Water flea population increase and propagation are assured even when the Cladocera feed exclusively on bacteria. Bacterial concentrations of less than 200,000 are critical for the majority of species. Concentrations below 1 million cannot provide for a high rate of reproduction. Bacterial concentrations of between 1 and 3 millions are the most favorable for population reproduction. Very high bacterial concentrations (more than 3 million for the majority of species) have an inhibitory effect on the reporduction of Cladocera. With the same bacterial concentrations the different species of water fleas have dissimilar reproduction rates which are determined by fertility and adaptation to temperature conditions. (Author)

Nikolskii, G. V.
CONCERNING THE CAUSES OF FLUCTUATIONS IN THE ABUNDANCE OF FISHES (O Prichinakh Flyukyuatsii Chislennosti Ryb) tr. by W. E. Ricker. 1962, 11p. 27 refs. FRBC Trans. Series no. 389.
Order from NRCC NRCC C-4227

Trans. of Voprosy Ikhtiologii (USSR) 1961, v. 1, no. 4(21) p. 659-665.

DESCRIPTORS: *Fishes, Marine biology, Growth, *Reproduction, Aquatic animals, Food, Adaptation (Physiology).

Nusenbaum, L. M. and Lapitskaya, L. N.
FIRST RESULTS OF THE OPERATION OF THE FISH PASS AT THE VOLGA HYDROELECTRIC STATION NAMED "XXII CONGRESS OF THE KPSS" (Pervye Rezultaty Raboty Rybopodemnika na Volzhskoi GES imeni XXII Sezda KPSS) tr. by W. E. Ricker. 1963, 4p. (figs. omitted) FRBC Trans. Series no. 378.
Order from NRCC NRCC C-4229

Trans. of Rybnoe Khozyaistvo (USSR) 1961, v. 37, no. 11, p. 13-18.

DESCRIPTORS: *Fishes, Marine biology, *Dams, Aquatic animals, Hydroelectric power systems.

Pravdin, I. F.
A REVIEW OF INVESTIGATIONS ON THE FAR-EASTERN SALMONS (Obzor Issledovanii Dalnevostochnykh Lososei) tr. by W. E. Ricker. 1962, 143p. 96 refs. FRBC Trans. Series no. 371.
Order from NRCC NRCC C-4232

Trans. of Tikhookeanskii N[auchno]-I[ssledovatel'skii] Institut Rybnogo Khozyaistva i Okeanografii. Izvestiya (USSR) 1940, v. 18, p. 5-105.

DESCRIPTORS: *Salmon, *Fishes, Physiology, Pacific Ocean, Ecology, Age, Bibliographies.

Sakowicz, Stanislaw and Zarnecki, Stanislaw.
POOL-TYPE FISHWAYS: BIOLOGICAL ASPECTS IN THEIR CONSTRUCTION (Przeplawki Komorowe: Biologiczno-Rybackie Zasady Projektowania) tr. by G. Bachrach. 1962, 138p. 36 refs. PL-480 Int.
Order from OTS $1.50 60-21496

Trans. of Roczniki Nauk Rolniczych. Ser[ia] D: [Monografie] (Poland) 1954, v. 69, p. 5-171.

DESCRIPTORS: *Fishes, Marine biology, *Dams.

Savvaitova, K. A. and Reshetnikov, Ya. S.
THE FOOD OF DIFFERENT BIOLOGICAL FORMS OF THE DOLLY VARDEN CHAR, SALVELINUS MALMA (WALB.) IN CERTAIN KAMCHATKA WATERS (Pitanie Razlichnykh Biologicheskikh Form Goltsa, Salvelinus malma (Walb.) v Nekotorykh Vodoemakh Kamchatki) tr. by R. E. Foerster. 1962, 12p. 24 refs. FRBC Trans. Series no. 373.
Order from NRCC NRCC C-4236

Trans. of Voprosy Ikhtiologii (USSR) 1961, v. 1, no. 1(18) p. 127-135.

DESCRIPTORS: *Food, *Marine biology, *Fishes, *Salmonidae, Ecology, Oceans, Lakes, Morphology, Aquatic animals.

Anadromous, lake-stream and lake forms of char differ in the character of their food. The anadromous char feed mainly on terrestrial insects and aquatic larval forms of insects, the lake-stream - principally on molluscs, the lake-resident - are predaceous. For each biological form the character of the food varies according to the size of the fish, the season and the actual conditions prevailing in the area inhabited. The results obtained confirm the conclusions that char are not always harmful to other fish. In the regions examined the char consume smelt and sticklebacks, which are food competitors of young sockeye, and thus they are more beneficial than harmful. Since they feed on the eggs of salmon the char may be considered to play a "sanitary" role on the spawning grounds, destroying that which must inevitably die, i.e., those eggs which are washed away during spawning and during the digging up of the redds by later-arriving salmon. There is a wide variability in the food of the various forms of char. Each has a specific type of food, natural for each form and permitting it to occupy a different food niche. On the whole, this serves to assure the full utilization of the diverse food resources of the waters. (Author)

Vil'son, A. P.
THE BIOLOGY AND FISHERY OF THE GULF OF KANDALAKSHA HERRING. 1962 [20]p. (figs. omitted) 21 refs. [DSIR] NLL M. 3912.
Order from OTS or SLA $1.60 63-15227

Trans. of [Materialy po Kompleksnomu Izucheniyu Belogo Morya] (USSR) 1957, v. 1, p. 90-104.

DESCRIPTORS: Marine biology, *Fishes, *Herring, Reproduction, Distribution, Eggs, Growth.

Topics include: A short history of the fishery; distribution and migration; fecundity; spawning conditions; the age composition of catches; approximate calculation of the numerical strength of the various generations; approximate computation of the number of eggs deposited; and the present state of supply resources.

Zaks, M. G. and Sokolova, M. M.
ON THE MECHANISMS OF ADAPTATION TO CHANGES IN WATER SALINITY BY SOCKEYE SALMON (ONCORHYNCHUS NERKA WALB.) (O Mekhanismakh Adaptatsii k Ismeneniyam Solenosti Vody u Nerki Oncorhynchus nerka (Walb.)) tr. by R. E. Foerster. 1962 [18]p. (fig. omitted) 24 refs. FRBC Trans. Series no. 372.
Order from NRCC NRCC C-4287

Trans. of Voprosy Ikhtiologii (USSR) 1961, v. 1, no. 2(19) p. 333-346.

DESCRIPTORS: *Adaptation (Physiology), Water, *Salinity, *Salmonidae, *Marine biology, Aquatic animals.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 211 (CHEMISTRY SERIES). 14 June 63 [6]p. JPRS: 19684.
Order from OTS $0.50 63-31041

Abstract trans. of Revista de Chimie (Rumania) 1963, v. 14, no. 2, p. 67-103, 111-115.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Fertilizers, Silicon, Dyes, Towers (Chemistry) Fluid flow, Lactams.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 216 (CHEMISTRY SERIES). 24 June 63 [16]p. JPRS: 19823.
Order from OTS $0.50 63-31104

Consists of abstracts of articles from the scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Physical chemistry, Electrochemistry, Inorganic substances, *Organic compounds, Synthesis, Chemical analysis, Complex compounds, Catalysis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 239 (CHEMISTRY SERIES). 9 July 63, 28p. JPRS: 20081.
Order from OTS $0.75 63-31236

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Biochemistry, *Chemical analysis, *Spectroscopy, *Physical chemistry, Electrochemistry, Organic compounds, *Elastomers, Chemical engineering, Plants (Botany), Blood chemistry, *Crystals.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 240 (CHEMISTRY SERIES). 10 July 63, 7p. JPRS: 20110.
Order from OTS $0.50 63-31251

Abstract trans. of Roczniki Chemii (Poland) 1963, v. 37, no. 5, p. 515-523, 525-545, 547-573, 575-579, 581-587, 589-600.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Organic compounds, Synthesis, Molecular structure, Complex compounds, Catalysts, *Biochemistry, *Pharmacology.

HUNGARIAN CHEMISTS VISIT SOVIET BLOC CHEMICAL INSTITUTIONS. 18 June 63, 23p. JPRS: 19713.
Order from OTS $0.75 63-31057

Trans. of Magyar Tudomanyos Akademia Kemiai Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1963, v. 19, no. 2, p. 277-278, 283-285; no. 3, p. 363-369, 387-392.

DESCRIPTORS: *Universities, Scientific organizations, *Biological laboratories, Physical chemistry, Isotopes, Electrochemistry, Nuclear physics, Spectroscopy, Machines, Chemicals, Chemists, Scientific research.

Contents:
Visit to Soviet organic chemical institutes, by T. Szekely
Visit to Czech chemical and biological institutes, by F. Tudos
Visit to the Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, by F. Henszelmann
Visit to East German Isotope Electrochemical, Physical Chemistry and Nuclear Physics Research Institute, by T. Palagyi
Visit to IR-Spectroscopy Laboratory of the Institute of Chemistry, Czech Academy of Sciences, by J. Szabolcs
Visit to Polish chemical and machinery institutes, by L. Barhegyi.

PROCESS FOR THE PRODUCTION OF WETTING AGENTS, DETERGENTS, DISPERSIVES, EQUALIZERS, SOFTENERS AND THE LIKE. [1962] 8p.
Order from OTS or SLA $1.10 63-10487

Trans. of French patent 789,522, gr. 14, cl. 8, by I. G. Farbenindustrie, Aktiengesellschaft, Germany, claimed 30 Mar 35, granted 19 Aug 35, pub. 30 Oct 35 (pat. claim registered in Germany 19 Apr 34).

DESCRIPTORS: *Surface-active substances, *Cleaning compounds, *Water softeners, Ethylenes, Oxides, Hydroxides, Carboxyl radicals, Alcohols, *Condensation reactions, Manufacturing methods.

Figurovskii, N. A.
THE INTERNATIONAL CHEMICAL CONGRESS IN KARLSRUHE. [1962] [7]p. 11 refs. C. E. Trans. 2576; [DSIR] NLL M. 8861.
Order from OTS or SLA $1.10 62-32831

Trans. of mono. Dmitrii Ivanovich Mendeleev, Moscow, 1961, p. 44-51.

DESCRIPTORS: Chemistry, *Conferences, History.

An account of some of the activities of the International Chemical Congress in Karlsruhe, Sept. 1860, from the standpoint of their influence on Mendeleyev.

Hieber, W.
THE PRESENT STATUS OF THE CHEMISTRY OF THE METAL CARBONYLS. [1963] 26p. 61 refs.
Order from SLA $2.60 63-10984

Trans. of die Chemie (Germany) 1942, v. 55, no. 1/2, p. 7-11; no. 3/4, p. 24-28.
Another trans. is available from SLA as AEC-tr-642, no. 2668, 39p.

DESCRIPTORS: Chemistry, *Metallic compounds, *Carbonyl radicals, Synthesis, Hydrides, Pressure, *Cobalt compounds.

Contents:
Preliminary observations on the history of their discovery; direct synthesis of metal carbonyls. New methods of preparing metal carbonyls in the liquid system: Preparation of pure carbonyls; production of metal carbonyl hydrides. New high-pressure syntheses of metal carbonyls from compounds; General considerations; Mechanism of high-pressure synthesis of carbonyls from metallic compounds such as cobalt carbonyl; High-pressure synthesis of cobalt carbonyl hydride. Mixed metal carbonyls: Heavy metal derivatives of cobalt carbonyl hydride through high-pressure synthesis; Formation of mixed carbonyls in the liquid way; Constitution.

Langauer, D[onat].
[UTILIZATION OF LANGBEINITE. II]. THE METHOD OF OBTAINING POTASSIUM SULPHATE FROM LANGBEINITE. [1963] 22p. (figs. tables omitted).
Order from SLA $2.60 63-16102

Trans. of [Przemysl Chemiczny (Poland) 1936, v. 20, p. 56-69].

DESCRIPTORS: *Potassium compounds, *Sulfates, *Magnesium compounds, Chlorine compounds, Water, Synthesis (Chemistry).

On the basis of purely theoretical considerations the possibility of the formation of Potassium Sulphate from diluted solutions of Langbeinite and KCL solutions is indicated. Since the rate of solution of Langbeinite in excess of water is greater than the rate of solution in saturated solutions, in a similar matter potassium sulphate can be isolated with greater facility. In order to obtain a higher yield it is necessary to saturate the sulphate solution to a higher $MgCl_2$ content. The crystals which are obtained as a result of the concentration and cooling processes can be further purified with diluted Langbeinite solutions. A definite quantity of impure Langbeinite must be dissolved at a temperature of 60° for one hour with strong agitation. The methatisis is carried out at 45° and the resulting sulphate solution is cooled down to 25°. The evaporation 105° is carried out until 65 mol $MgCl_2$ is obtained. The process of evaporation at reduced pressure shows signs of considerable delay of the precipitation. On the basis of experimental results the required amounts of crude Langbeinite, KCL, water and residual liquor will determine the necessity to obtain K_2SO_4. (Author)

Nametkin, S. S., Rudenko, M. G., and Gromova, V. N.
ON THE ACTION OF NITRIC ACID ON HYDRINDAN: PRELIMINARY REPT. [1963] 10p. (formulae omitted) 11 refs.
Order from OTS or SLA $1.10 63-14391

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 1, p. 61-66.

DESCRIPTORS: *Indene, *Nitric acid, *Nitration, Hydrogenation, Chemical reactions, Chemical properties.

Rozmarin, Gh.
SOVIET CHEMICAL NOMENCLATURE. 5 June 61 [36]p. 12 refs. JPRS: 8368.
Order from OTS or SLA $3.60 63-15708

Trans. of Institutul Politehnic, Iasi. Buletinul (Rumania) 1959, v. 5(9) no. 3/4, p. 177-193.

DESCRIPTORS: *Chemicals, *Molecular structure, Classification.

The systematic nomenclature proposes a new numbering system based on the criterion of evaluation of the mutual arrangement of the atoms belonging to a syclic structure. (Author)

Analytical Chemistry

TRANSACTIONS OF THE ACADEMY OF SCIENCES OF THE UKRAINIAN SSR, INSTITUTE OF METAL CERAMICS AND SPECIAL ALLOYS, SEMINAR ON HEAT-RESISTANT MATERIALS, 1961, VOL. 6: SELECTED ARTICLES. 18 Apr 63 [48]p. 26 refs. FTD-TT-62-1825.
Order from OTS or SLA $4.60 63-19681

Unedited rough draft trans. of Seminar po Zharostoikim Materialam. Trudy (USSR) 1961, v. 6, p. 38-58, 64-74.

DESCRIPTORS: *Chromium compounds, *Carbides, Powders, Heating, Stability, Chemical analysis, Acids, Alkali metal compounds, Oxidization, *Borides, Molybdenum compounds, Nickel compounds, Niobium compounds, Tantalum compounds, Titanium compounds, Tungsten compounds, Vanadium compounds, Zirconium compounds, Rare earth compounds, *Nitrides, Solubility, *Silicides, Thorium compounds, Iron compounds, Manganese compounds, *Heat-resistant materials.

Contents:
Chemical properties and methods of analyzing chromium carbides, by T. Ya. Kosolanoba and G. V. Samsonov
Chemical properties and methods of analyzing borides of transition and rare-earth meatal, by L. N. Kugai
Analysis of titanium, chromium and zirconium borides, by V. G. Shcherbakov and others
Chemical properties and analysis of some nitrides, by O. I. Popova and G. T. Kabannik
Chemical properties and methods of analyzing certain silicides, by T. Ya. Kosolapova and others.

Bergheimer.
REMOVAL OF MERCURY FROM SODIUM. 8 Oct 48 [1]p.
Order from OTS or SLA $1.10 63-10965

Trans. from unidentified German mono. pub. by I. G. Farbenindustrie A.G., Frankfurt a.M., n.d. (PB-73504F).

DESCRIPTORS: Separation, *Mercury compounds, *Sodium compounds, *Magnesium, Fused materials, Cooling.

The purification of sodium from mercury was performed in the following manner: Molten magnesium at a temperature of 680° was poured into the molten sodium. Upon cooling, the magnesium separated and carried the mercury with it. Up to 3% of magnesium was retained in the sodium. According to the cooling curve of the sodium magnesium system, it must, however, be possible to reduce the magnesium content further by slow cooling. (Report quoted in its entirely) (See also 63-10964)

Brunisholz, G., Genton, M., and Plattner, E.
COMPLEXOMETRIC DETERMINATION OF CALCIUM IN PRESENCE OF MAGNESIUM AND OF PHOSPHATE. [1963] 11p. 7 refs.
Order from SLA $1.60 63-16062

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1953, v. 36, p. 782-787.

DESCRIPTORS: *Calcium, Chemical analysis, *Magnesium, *Phosphates, Ion exchange, Titration.

Cuzin, Jean.
DETERMINATION OF ANTHRACENE, PYRENE, AND BENZO(A) PYRENE IN CONDENSATES OF TOBACCO SMOKE. [1962] 20p.
Order from SLA $1.60 63-16613

Trans. of mono. (report) of S.E.I.T.A., Jan 60. Also available from K-H $25.00 as K-H-11455d [1962] 20p.

DESCRIPTORS: *Anthracenes, *Pyrenes, *Benzopyrenes, *Tobacco, Smokes, Cigarettes, Chromatographic analysis, Ultraviolet spectroscopy, Fractionation, *Carcinogenic agents.

The determinations were made from the lipophilic fraction isolated from smoke condensates. The elements to be determined were separated by chromatography and the final readings were made by spectrophotometry (ultraviolet absorption) and fluorescence.

Filippova, N. A. and Dubrovskaya, T. F.
DETERMINATION OF LEAD AND ITS COMPOUNDS IN THE ACTIVE MATERIAL OF LEAD ACCUMULATORS (Opredelenie Svintsa i Ego Soedineniya v Aktivnykh Massakh Svintsovykh Akkumulyatorov) tr.. by M. Goyer. June 57 [9]p. 6 refs. RAE Library Trans. No. 670.
Order from OTS or SLA $1.10 63-23313

Trans. of Zav[odskaya] Lab[oratoriya] (USSR) 1956, v. 22, no. 8, p. 907-911.

DESCRIPTORS: *Lead compounds, *Anodes(Electrolytic cell), *Cathodes (Electrolytic cell), Oxides, Dioxides, Sulfates, *Storage batteries, Chemical analysis.

Details are given of the methods of determining the lead oxide, lead dioxide and lead sulphate content in the positive plate and the metallic lead, lead oxide and lead sulphate in the negative plate. Comparative results are given for the molybdate and trilonometric methods.

Frey, Horst.
QUANTITATIVE DETERMINATION OF CALCIUM IN VULCANIZED RUBBERS. [1963] 3p. (fig. tables omitted) 3 refs.
Order from SLA $1.10 63-14199

Trans. of Analytica Chimica Acta (Netherlands) 1951, v. 5, p. 317-320.

DESCRIPTORS: *Calcium, Quantitative analysis, *Rubber, *Vulcanizates, Chemical precipitation.

A simple and rapid procedure for the determination of calcium in vulcanized rubbers has been described. The calcium is precipitated as the oleate which is kept in fine suspension by means of "Duponol PC". The turbidity is then measured with a photoelectric colorimeter. (Author)

Grimmer, G.
SEPARATION OF A CONDENSATE FROM CIGARETTE SMOKE INTO HYDROCARBONS, PHENOLIC, ACIDIC, BASIC, AND NEUTRAL FRACTIONS. [1963] 14p. 3 refs.
Order from SLA $1.60 63-14393

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 7, p. 291-297.

DESCRIPTORS: Separation, *Cigarettes, *Smokes, Carbohydrates, Phenols, Acids, *Distillation.

An account is given of an analytical separating procedure for condensate from cigarette smoke. The condensate is separated into a hydrocarbon fraction, an acid fraction (phenols and acids), a basic fraction, and a neutral fraction (without hydrocarbons). The fractionation of the condensate is effected by partition between different solvents and adsorption on a basic exchanger (DOWEX). A fraction of aromatic hydrocarbons which no longer contains practically any aliphatic hydrocarbons is obtained by partition of the hydrocarbon fraction between the solvent pair nitromethane/cyclohexane. The proposed separating procedure is reproducible without difficulty. (Author)

Hunold, G. A. and Schühlein, B.
THE PYRIDINE ALKALI REACTION AS BASIS FOR THE DETERMINATION OF CHLORINATED ALIPHATIC HYDROCARBONS. [1963] 13p. (figs. omitted) 20 refs.
Order from SLA $1.60 63-14092

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1961, v. 179, no. 2, p. 81-91.

DESCRIPTORS: *Hydrocarbons, *Aliphatic compounds, *Chlorides, *Pyridines, Hydroxides, Chemical reactions, Quantitative analysis.

The pyridine-alkali reaction which has become known as the "Fujiwara reaction" for the qualitative detection of chloroform, was tested as to its use in the determination of other chlorinated aliphatic hydrocarbons. Procedures are given for the quantitative determination of carbon tetrachloride, ethane tetrachloride, chloroform ethylene tetrachloride, ethylene trichloride, ethane dichloride and ethylene chlorohydrine in indoor air. (Author)

Ivanova, L. K.
NEW METHOD FOR DETERMINATION OF MOISTURE IN SUGARS. [1963] 2p.
Order from OTS or SLA $1.10 63-14862

Trans. of Sakharnaya Prom[yshlennost'] (USSR) 1954, v. 28, no. 4, p. 45-46.

DESCRIPTORS: Determination, *Moisture, *Carbohydrates.

Ketzler.
PURIFICATION OF MERCURY-CONTAINING SODIUM. 8 Oct 48, 3p.
Order from OTS or SLA $1.10 63-10964

Trans. from unidentified German mono. pub. by I. G. Farbenindustrie A.G., Frankfurt a.M., n.d. (PB-73504H).

DESCRIPTORS: Purification, *Sodium compounds, *Mercury compounds, *Material separation, Chemical analysis, *Dithizone, Bromine, *Colorimetric analysis, Carbon tetrachloride.

Kuratani, Kenchi.
ANALYSIS OF SILICONE RESINS BY INFRARED ABSORPTION. [1963] 8p. 5 refs.
Order from SLA $1.10 63-16566

Trans. of [Nihon Kagaku Zasshi] (Japan) 1952, v. 73, p. 576-578.

DESCRIPTORS: *Silicone plastics, *Infrared spectroscopy, Quantitative analysis, Phenyl radicals, Methyl radicals, Absorption spectrum.

From two analytical examples, it is verified that group type analysis by the infrared absorption method is very useful for determining the composition of copolymers. (Author)

Lavrovskii, K. P., Nikolaeva and others.
THE EXPERIMENT CONCERNING THE APPLICATION OF THE METHOD OF THE SO-CALLED "HYDROGEN NUMBER" TO THE ANALYSIS OF PYROLYZED BENZINE. [1963] [15]p. 26 refs.
Available on loan from OTS or SLA 63-10696

Trans. of Neftyanoe Khozyaistvo (USSR) 1935, v. 28, no. 8, p. 65-69.

DESCRIPTORS: *Benzine, Pyrolysis, Chemical analysis, *Hydrogenation, Catalysts, *Platinum catalysts, Iodine.

Kleiner, K. E.
DOSAGE DE L'OXYGÈNE DANS LES MÉTAUX ET LES OXYDES À L'AIDE DU MONOCHLORURE DE SOUFRE. I. DOSAGE D'OXYGÈNE DANS LES OXYDES DE Al, Mg, Fe ET Ba. [Determination of Oxygen in Metals and Oxides Using Sulfur Monochloride. Pt. 1. Determination of Oxygen in the Oxides of Aluminum, Manganese, Copper, Iron, and Barium Sulfate] tr. by Fedorovsky. 30 Nov 62 [11]p. 6 refs. CEA Trans. no. R 1677.
Order from OTS or SLA $1.60 63-15501

Trans. in French of Ukrain[skii] Khim[icheskii] Zh[urnal] (USSR) 1956, v. 22 no. 6] p. 809-812.
Another trans. in English is available from LC mi$1.80, ph$1.80 as 59-11237, APL/JHU TG 230-T40, 24 Sep 58, 8p.

DESCRIPTORS: *Aluminum compounds, *Manganese compounds, *Copper compounds, *Iron compounds, Oxides, *Barium compounds, Sulfates, Chemical analysis, *Oxygen, Determination, Reagents, *Sulfur compounds, Chlorides, Metals.

For abstract see Technical Translation 1: 53, 1959.

Palei, P. N. and Hsü, Li-yüan.
TITRAGE COMPLÉXOMÉTRIQUE DE L'URANIUM TÉTRAVALENT, LE THORON SERVANT D'INDICATEUR (Kompleksonometricheskoe Titrovanie Chetyrekhvalentnogo Urana s Indikatorom Toron) [Chelatometric Titration of Tetravalent Uranium with Thoron as an Indicator] tr. by Garber. 24 Mar 62 [20]p. (foreign text included) 37 refs. CEA Trans. no. R 1552
Order from OTS or SLA $1.60 63-15491

Trans. in French #Zh[urnal] Anal[iticheskoi] Khim[ii] (USSR) 1961 [v. 16, no. 1] p. 51-56.

DESCRIPTORS: *Titration, *Uranium, Radon, Chemical indicators, Fluorides, Aluminum, Ions.

The possibility has been shown of complexometric titration of uranium (IV), with thoron as on indicator, at pH 1.0-1.8 in the presence of a number elements. A method has been suggested for the determination of uranium (IV) in tetrafluoride using aluminium ions to mask fluorine. (Author)

Pelcik, J.
NEW SENSITIVE DETECTION METHOD FOR NAPHTHENIC ACIDS. [1963] 5p.
Order from ATS $8.00 ATS-77Q69G

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1962, v. 27, no. 6, p. 1503-1507.

DESCRIPTORS: Chemical analysis, *Naphthenes, Acids, Detection.

Schöniger, W.
RAPID MICRODETERMINATION OF HALOGENS AND SULFUR IN ORGANIC COMPOUNDS [Die Mikroanalytische Schnellbestimmung von Halogenen und Schwefel in Organischen Verbindungen]. [1963] 8p. (figs. omitted) 11 refs.
Order from SLA $1.10 63-14106

Trans. of Mikrochimica Acta (Austria) 1956 [no. 4/6] p. 869-876.
Other translations are available from SLA mi$2.40, ph$3.30 as 59-10719 [1958] 13p.; mi$1.80, ph$1.80 as 61-10485 [1960] [10]p. and from K-H $12.50 as K-H-12104 [1962] 10p.

DESCRIPTORS: *Halogens, *Sulfur, Organic compounds, Microanalysis, Determination, Microchemistry.

For abstract see Technical Translations 2: 115, 1959.

Schöniger, W. and [Sandoz, A. G.]
RAPID MICRODETERMINATION OF HALOGENS IN ORGANIC SUBSTANCES [Eine Mikroananlytische Schnellbestimmung von Halogen in Organischen Substanzen]. [1963] 7p. (figs. omitted) 18 refs.
Order from SLA $1.10 63-14105

Trans. of Mikrochimica Acta (Austria) 1955, no. 1, p. 123-129.
Another trans. is available from SLA mi$1.80, ph$1.80 as 61-10486 [1960] [9]p.

DESCRIPTORS: *Halogens, Organic compounds, Microanalysis, Microchemistry, Determination.

For abstract see Technical Translations 5: 404, 1962.

Sedivec, Vaclav.
PHOTOMETRIC DETERMINATION OF CHLOROBENZENE IN BENZENE. [1963] 5p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-14243

Trans. of Chem[icke] Listy (Czechoslovakia) 1956, v. 50, p. 752-755.

DESCRIPTORS: *Benzenes, Chlorides, Nitro radicals, Colorimetric analysis, Pyridines.

A method was worked out for the determination of small amounts of chlorobenzene in benzene. The mixture examined is put into a mixture of its related dinitro compounds and the amount of 1-chloro-2, 4-dinitrobenzene formed is determined by photometry from its color reaction with pyridine. (Author)

Spauszus, S. and Schwarz, C.
THE COMPLEXOMETRIC DETERMINATION OF SULPHUR BY THE EVOLUTION METHOD. Apr 63
Order from BISI £1 10s BISI-3205

Trans. of Neue Hütte (East Germany) 1963, v. 8 [no. 1] p. 40-41.

DESCRIPTORS: *Sulfur, Determination

Szekeres, Leszlo and Rady, Martha.
THE SOLUBILITY OF SOME CALCIUM PHOSPHATES [I]. [1963] 6p. 6 refs.
Order from SLA $1.10 63-16279

Trans. of [Agrartudomanyi Egyetem. Agronomiai Kar. Kiadvanyai] (Hungary) 1957, v. 4, no. 4, p. 3-8.

DESCRIPTORS: *Calcium compounds, *Phosphates, Solubility, Solvents, Fertilizers.

The solubility of chemically pure tricalcium phosphate, also of kola phosphate contg. 39.8% P_2O_5, and Israeli phosphate contg. 33.7% P_2O_5 in boiled and unboiled distilled water, 1 N, 0.5, 0.1 and 0.01 N NaOH 1 N, 0.5, 0.1 and 0.01 N ammonium carbonate solution, a PH 10 ammonium chloride - ammonium hydroxide buffer solution a pH 4 lactate buffer solution, 1 N, 0.5, 0.1 and 0.01 N ammonium nitrate solution, and a 1 N. 0.5 and 0.1 N calcium nitrate solution, was investigated. The purpose was to shed some light on the origin of the phosphorus fractions obtained in the analysis of stable manure through the use of various solvents. (Author)

Szekeres, L[eszlo] and Rady, M[artha].
THE SOLUBILITY OF SOME CALCIUM PHOSPHATES, II. [1963] 3p. 2 refs.
Order from SLA $1.10 63-16280

Trans. of [Agrartudomanyi Egyetem. Agronomiai Kar. Kiadvanyai] (Hungary) 1957, v. 4 [no. 4, p. 9ff].

DESCRIPTORS: *Calcium compounds, *Phosphates, Solubility, Solvents, Fertilizers.

Tricalcium phosphate and magnesium ammonium phosphate dissolves to a relatively high degree in the various solvents. The extraction of these substances which originate in animal feces, from manure, should therefore be relatively easy. The solubility of natural Kola phosphate (apatite type) and a calcium phosphate with a composition resembling hydroxyl apatite, is significantly different. The solubility of thermally prepared fluorapatite in NaOH is considerably less than that of Kola phosphate, however, in other solvents, it is generally higher than that of the natural Kola phosphate. (Author) (See also 63-16279)

Tilicheev, M. D. and Masina, M. P.
THE PROBLEM OF THE QUANTITATIVE DETERMINATION OF AROMATIC HYDROCARBONS IN CRACKED GASOLINE. [1963] 11p. 17 refs.
Order from OTS or SLA $1.60 63-14088

Trans. of Neftyanoe Khozyaistvo (USSR) 1930, v. 18, no. 4, p. 641-646.
Another trans. is available from SLA as RT-1572.

DESCRIPTORS: *Gasoline, Quantitative analysis, Hydrocarbons, *Toluenes, Sulfuric acid.

Zvorykin, A. Ya. and Sokolovskii, A. D.
THE HEATING CURVES OF CARBOHYDRATES. [1963] 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-14876

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1939, v. 12, no. 9, p. 1430-1432.

DESCRIPTORS: *Heating, *Carbohydrates, Chemical analysis.

Inorganic Chemistry

Carriere, Emile and Guiter, Henri.
PRECIPITATION AND PREPARATION OF VANADATES. [1963] 2p. (refs. omitted).
Order from SLA $1.10 63-14214

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1937, v. 204, p. 1339-1340 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Vanadates, Chemical precipitation, Sodium compounds, Ammonium radicals, Barium compounds, Silver compounds, Lead compounds, Hydrogen ion concentration.

Dede, L. and Russ, W.
CONTRIBUTIONS TO THE KNOWLEDGE OF GERMANIUM. 1. THE WORKING UP OF GERMANITE; THE PREPARATION OF PURE GERMANIUM DIOXIDE AND PUREST GERMANIUM TETRACHLORIDE. [1963] 16p. (figs. omitted) 11 refs.
Order from SLA $1.60 63-14425

Trans. of [Chemische] Berichte (Germany) 1928, v. 61, p. 2451-2459.

DESCRIPTORS: Germanium, *Germanium compounds, Dioxides, *Chlorides, Copper compounds, Minerals, Oxides, Gallium compounds, Purification, Chemical reactions.

Eulenberger, G., Wittmann, A., and Nowotny, H.
GERMANATES WITH BIVALENT METAL IONS. [1963] 14p. 28 refs.
Order from SLA $1.10 63-14452

Trans. of Monatshefte fllr Chemie (Austria) 1962, v. 93, no. 5, p. 1046-1054.

DESCRIPTORS: *Germanium compounds, *Oxides, *Metals, *Ions, *Intermetallic compounds, Crystals, *Crystal lattices, Molecular structure.

Presented is confirmation of Ca_2GeO_4 and Sr_2GeO_4, with olivine type structure, within the systems CaO-GeO_2 and SrO-GeO_2. Single crystal measurements prove $CaGeO_3$ to have β-wollastonite structure. Additionally there exists $CaGe_2O_5$ with a structure similar to titanite. Another form of the monogermanate is formed under hydrothermal conditions, and an orthogermanate hydrate is also observed. $SrGeO_3$ with α-wollastonite structure can be obtained from SrH_2GeO_4 by heating above 1000° C. In the system BaO-GeO_2 analogously $BaGeO_3$ with α-wollastonite structure is formed from $BaGeO_3 \cdot 5\ H_2O$ ($BaH_2GeO_4 \cdot 4\ H_2O$). Some compounds referred to as digermanates "$MeGe_2O_5$" are tetragermanates $MeGe_4O_9$ (Me=Ca, Sr, Ba). Within the system PbO-GeO_2 the following compounds are considered to be confirmed: $PbGe_4O_9$ and $PbGeO_3$, while the composition of other compounds described is not unequivocal. (Author)

Hautefeuille, P. and Perrey, A.
ON THE OXYCHLORIDES OF ALUMINUM. [1963] 2p.
Order from SLA $1.10 63-14250

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1885, v. 100, p. 1219-1220 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Aluminum compounds, *Oxychlorides, Synthesis (Chemistry). Oxides. Chlorides. Combustion.

Kröger, Carl and Fingas, Ernst.
THE ACTION OF CARBON UPON ALKALI CARBONATES. [1963] 10p. (figs. omitted).
Order from SLA $1.10 63-16168

Partial trans. (excerpts) of Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1933, v. 212, p. 269-283.

DESCRIPTORS: *Carbonates, *Alkali metal compounds, *Carbon, *Graphite, Pressure, Catalysts, Chemical reactions, Chemical equilibrium, Coal, Coke.

Scholder, R. and Mansmann, M.
COMPOUNDS OF THE SO-CALLED BETA-ALUMINA TYPE. [1963] 3p. 7 refs.
Order from SLA $1.10 63-14749

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1960, v. 15b, p. 681.

DESCRIPTORS: *Aluminum compounds, Oxides, Alkali metal compounds, Chemical properties.

Compounds of the beta-alumina type have the formula $X_2O.6Y_2O_3$, (X = alkali, Y = Al, Ga, Fe), and not $X_2O.11Y_2O_3$ as was previously thought. The experimental basis for the new formula is presented briefly.

Ueno, Itaru.
MANUFACTURE OF ANHYDROUS MAGNESIUM CHLORIDE FROM MAGNESIUM OXIDE AND AMMONIUM CHLORIDE AS RAW MATERIALS, PTS. III-V. [1963] [9]p.
Order from SLA $1.10 63-14707

Trans. of Kogyo Kagaku Zasshi (Japan) 1945, v. 48, p. 65-67.

DESCRIPTORS: *Magnesium compounds, *Chlorides, *Oxides, *Ammonium compounds, Iron compounds, Silicon compounds, Aluminum compounds, Calcium compounds, Carbonates, Magnesite, Pyrolysis.

Contents:
Relationship of generation of ammonia gas and the mixing ratio of raw materials to the purity and yield of magnesium chloride
Reaction between ammonium chloride and ferric oxide, silica, alumina, lime, calcium carbonate or magnesium carbonate, and the reaction mechanism of this process
Experiment using roasted magnesite.
(See also 63-14154)

Ueno, Itaru.
MANUFACTURE OF ANHYDROUS MAGNESIUM CHLORIDE FROM MAGNESIUM OXIDE AND AMMONIUM CHLORIDE AS RAW MATERIALS. PT. VI. EXPERIMENT ON CALCINATION IN KILOGRAM UNITS. [1963] 3p.
Order from SLA $1.10 63-14893

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1946, v. 49, p. 121.

DESCRIPTORS: *Magnesium compounds, *Chlorides, *Oxides, *Ammonium compounds, *Calcination, Magnesite, Chemical analysis.

(See also 63-14707)

Organic Chemistry

PREPARATION OF ETHYLSULFURIC ACID AND DIETHYLSULFATE FROM ETHYLENE AND SULFURIC ACID AND THE REVERSE REACTION BETWEEN ETHYLSULFURIC ACID AND DIETHYLSULFATE TO YIELD ETHYLENE AND SULFURIC ACID. [1963] 11p. 2 refs.
Order from SLA $1.60 63-16032

Trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Ethyl radicals, *Sulfuric acid, *Sulfates, *Ethylenes, Catalysts, Silver compounds, Chemical equilibrium, Chemical reactions, Pressure.

PROCESS FOR THE PREPARATION OF NEW FLUORINE CONTAINING COMPOUNDS. [1962] [4]p.
Order from OTS or SLA $1.10 62-20015

Trans. of German patent application C 26, 226, IV d/728, 13 Feb 62, by Chemische Fabrik Pfersee G.m.b.H.

DESCRIPTORS: *Synthesis (Chemistry), *Fluorides, *Isocyanates, Ethylenes, Imines, Chemical reactions, *Urea, Polymers.

The invention concerns a process for the preparation of new fluorine containing compounds, in which isocyanates of the formula $X(CF_2)_nCH_2NCO$, wherein n is a whole number of at least 3 and X is fluorine or hydrogen, are reacted with alkylenimines of the formula $R-CH\begin{smallmatrix}\diagdown\\ CH_2\end{smallmatrix}\!\!>\!N$ wherein R signifies hydrogen or a low to average alkyl radical, or their polymers, and the resulting compounds then if necessary polymerized in part. Molar quantities of the two components are reacted. The reaction takes place in the presence of a solvent and with cooling to temperatures of about 5 to 10°. (Author)

PROCESS FOR THE PREPARATION OF 1, 1-DIHYDROPERFLUOROALKYL ISOCYANATES. [1962] [3]p.
Order from OTS or SLA $1.10 62-20016

Trans. of German patent application C 25,628, IV b/720, 28 Nov 61, by Chemische Fabrik Pfersee G.m.b.H.

DESCRIPTORS: *Synthesis (Chemistry), *Isocyanates, Hydroxides, *Fluorides, *Alkyl radicals, Chlorides, Amines, Methanes, Sulfones, Phosgene, Chemical reactions.

The invention concerns a process for the preparation of 1, 1-dihydroperfluoroalkyl isocyanates of the general formula $CF_3(CF)_nCH_2NCO$, whereby n = 0 to 10, in which the amine salts of 1, 1-dihydroperfluoroalkyl amines in tetramethylene sulfone are reacted with phosgene at 20-150°C. The hydrochlorides of 1, 1-dihydroperfluoroalkyl amines are used as the amine salts, and these are prepared by introduction of HCl gas into a tetramethylene sulfone solution of the amine. (Author)

Boeseken, J.
ACTION OF ALUMINUM CHLORIDE ON CHLORAL, III. [1963] 3p. 6 refs.
Order from SLA $1.10 63-14116

Partial trans. (p. 104-108) of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1910, v. 29 [p. 85-112].
A partial trans. (p. 95-96) is available from SLA $1.10 as 63-14115 [1963] 1p.

DESCRIPTORS: *Hypnotics and sedatives, *Acetaldehydes, Chlorides, Decomposition, Catalysts, *Aluminum compounds, Hydrochloric acid, Carbon compounds, Monoxides.

Boeseken, J.
POLYMERIZATION OF CHLORAL, II. [1963] 1p.
Order from SLA $1.10 63-14115

Partial trans. (p. 95-96) of Recueil [des] Travaux Chim[iques des Pays-Bas] (Netherlands) 1910, v. 29 [p. 85-112].

DESCRIPTORS: *Hypnotics and sedatives, *Acetaldehydes, Chlorides, *Polymerization, Decomposition, Aluminum compounds.

Cleve, W.
PROCESS FOR THE PRODUCTION OF COMPLEXES OF ETHYL ALUMINIUM CHLORIDE FOR OLEFINE POLYMERISATION CATALYSIS. [1963].
Order from TTIS $6.30 TTIS NS-88

Trans. of East German patent 24,671, appl. 6 Oct 59, pub. 12 Feb 63.

DESCRIPTORS: *Ethyl radicals, *Aluminum compounds, *Chlorides, Ethylenes, Polymerization, Catalysis, Synthesis (Chemistry).

Coenen.
AMINOPHENYL UREAS. 16 Sep 48 [3]p.
Order from OTS or SLA $1.10 63-14807

Trans. from mono. (report) of I. G. Farbenindustrie, A.G., Höchst, n.d. (PB-73497).

DESCRIPTORS: *Urea derivatives, Phenyl radicals, *Amines, Synthesis (Chemistry), Physical properties.

In the course of a study on new stabilizers, a series of new nitrophenyl ureas was prepared by the reaction of nitrophenyl isocyanates upon organic amines. By reduction of the product at a contact catalyst or with nascent hydrogen, it was possible to prepare new aminophenyl ureas. The substances obtained and their properties are summarized. (Author)

Dauphin, J.
THE RADIOCHEMICAL BEHAVIOR OF CERTAIN SATURATED HYDROCARBONS. PT. 1: GENERAL THEORY AND EXPERIMENTAL METHODS. [1963] 20p.
Order from ATS $24.75 ATS-40Q69F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1962, v. 59, no. 11/12, p. 1196-1206.

DESCRIPTORS: *Hydrocarbons, *Radiochemistry, Theory.

Dauphin, J.
THE RADIOCHEMICAL BEHAVIOR OF CERTAIN SATURATED HYDROCARBONS. PT. 2: CYCLOALKANES. [1963] 27p.
Order from ATS $29.50 ATS-41Q69F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1962, v. 59, no. 11/12, p. 1207-1222.

DESCRIPTORS: *Hydrocarbons, *Radiochemistry, *Alkanes.

(See also ATS-40Q69F)

Dauphin, J.
THE RADIOCHEMICAL BEHAVIOR OF CERTAIN SATURATED HYDROCARBONS. PT. 3: ALKANES. [1963] 17p.
Order from ATS $18.75 ATS-42Q69F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1962, v. 59, no. 11/12, p. 1223-1232.

DESCRIPTORS: *Hydrocarbons, *Radiochemistry, *Alkanes.

(See also ATS-41Q69F)

Dedek, J., Jelinek, B., and Kulcickvy, J.
NEW RESEARCH ON STARCH. [1963] [18]p. (fig. omitted) 7 refs.
Order from SLA $1.60 63-14882

Trans. of Annales des Fermentations (France) 1937, v. 3, p. 257-275.

DESCRIPTORS: *Starches, *Viscosity, Heat treatment, Volume, Decomposition, Gels, Particles.

Enklaar, J. E.
RESEARCH ON THE ACTION OF ALKALIS ON CHLORAL HYDRATE: CONCLUSIONS. [1963] 7p. 8 refs.
Order from SLA $1.10 63-14117

Trans. of Recueil [des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1910, v. 29, p. 173-184.

DESCRIPTORS: *Acetaldehydes, Chlorides, Hydrates, Decomposition, Catalysts, *Alkaline metal compounds, Potassium compounds, Sodium compounds, Hydroxides, *Hypnotics and sedatives, Antispasmotic agents, Germicides.

Jolibois, Pierre
THE FORMULAS OF ORGANO-MAGNESIUM DERIVATIVES AND OF MAGNESIUM HYDRIDES. [1963] 3p. 4 refs.
Order from SLA $1.10 63-14283

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1912, v. 155, p. 353-[354] (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Metalorganic compounds, *Magnesium compounds, *Hydrides, Iodides, Synthesis (Chemistry), Theory, *Grignard reagents.

Kato, Jiro, Komatsu, Takashi and others.
CHEMICAL PROPERTIES OF (BETA)-CYANPROPION ALDEHYDE. [1963] 14p. (formulae omitted) 17 refs.
Order from SLA $1.60 63-16274

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 4, p. 548-551.

DESCRIPTORS: *Aldehydes, *Cyano radicals, Chemical properties, Polymers, Polymerization, Propionic acids, Oxidatio

Krause, Erich and Grosse, Aristid von.
THE CHEMISTRY OF THE METAL-ORGANIC COMPOUNDS: LEAD. [1963] [63]p. 178 refs.
Order from SLA $6.60 63-16020

Trans. of mono. Die Chemie der Metall-Organischen Verbindungen [Berlin, 193?] p. 372-427.

DESCRIPTORS: *Metalorganic compounds, *Lead compounds, *Alkyl radicals, Cyclohexanes, *Aryl radicals, *Phenyl radicals, *Bitolyls, *Halides, *Methanes, Fatty acids, Chemical properties, Physical properties, Chemical reactions.

Marckwald, W. and Struwe, F.
SOME GUANIDINE SALTS. 26 Mar 63, 9p.
Order from SLA $1.10 63-14723

Trans. of [Chemische] Berichte (Germany) 1922, v. 55, p. 457-463.

DESCRIPTORS: *Guanidines, Salts, Chlorates, Sulfates, *Explosive materials, Perchlorates, Chemical properties, Physical properties, *Sulfides, Sulfites, Thiosulfates, Xanthic acids, Borates, Stannates, Formates, Methanes, Phenols, Nitro radicals, Cresols, Benzenes, Sulfamic acid, Phthalimides.

Mel'nikov, N. N.
INVESTIGATIONS IN THE FIELD OF ORGANIC MERCURY COMPOUNDS. VI. CONCERNING SYNTHESIS OF DIALKYL-MERCURY. [1963] 9p. 12 refs.
Order from OTS or SLA $1.10 63-14292

Trans. of Zhurnal Obshchei Khimii (USSR) 1946, v. 16, no. 12, p. 2065-2071.

DESCRIPTORS: *Metalorganic compounds, *Mercury compounds, *Alkyl radicals, Synthesis (Chemistry), Bromides, Sodium compounds, Mercury alloys.

It was shown that completely metalorganic compounds of mercury are obtained in good yield by reaction of alkyl bromide with sodium amalgam. It was established that the content of sodium in the amalgam employed for the synthesis of dialkylmercury from alkyl halides according to Frankland is of great importance. With the use of high-sodium amalgam a considerable decrease occurs in the yield of the organic compound of mercury owing to the increasing importance of the Wurtz reaction. The general mechanism is given of the reaction of formation of dialkylmercury from sodium amalgam and the alkyl halide according to which the former is formed as the result of the addition of the alkyl halide to mercury, followed by reduction of the alkylmercuryhalide with sodium, and by the addition of free radicals to mercury. (Author)

Nakazima, M., Okubo, T., and Katumura, Y.
THE ALKALINE DEHYDROCHLORINATION AND THE STRUCTURES OF THE BENZENE HEXACHLORIDE ISOMERS AND THEIR RELATED COMPOUNDS, II. [1963] 13p. 5 refs.
Order from SLA $1.60 63-14838

Trans. of Botyu-Kagaku (Japan) 1950, v. 15, p. 97-103.

DESCRIPTORS: *Benzenes, *Chlorides, *Molecular structure, Molecular isomerism, Hydrogen compounds, Reduction (Chemistry).

The paper deals with the alkaline dehydrochlorination of the BHC isomers and related compounds. Certain correlations between structure and reduction, or dehydrochlorination are discussed.

Nesmeyanov, A. N., Dantsiev, B. G. and others.
SYNTHESIS OF TRITIUM-LABELED CYCLIC HYDROCARBONS BY USING TRITIUM RECOIL NUCLEI (Sintez Mechennykh po Tritiyu Tsiklicheskikh Uglevodorodov s Pomoshch'yu Yader Otdachi Tritiya). [1963] [17]p. 11 refs.
Order from OTS or SLA $1.60 AEC-tr-5446

Trans. of Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 3, 1962, p. 13-25 (STI/PUB/20).

DESCRIPTORS: *Radiation chemistry, *Labeled substances, *Tritiated compounds, Hydrocarbons, *Cyclohexanes, Methyl radicals, *Cyclohexenes, *Cyclohexadienes, *Cycloheanols, Amines, *Benzenes, Synthesis (Chemistry), Tritium, *Recoil atoms, Production, *Lithium compounds, Carbonates, Neutron absorption, Alpha decay, *Towers (Chemistry).

The results are given of investigating the interaction of tritium recoil atoms produced by the reaction $Li^6(n,\alpha)T$ with cyclohexane, cyclohexene, cyclohexadiene, methyl cyclohexane, cyclohexanol, cyclohexylamine and benzene. Mixtures of these compounds with lithium carbonate were neutron irradiated. From lg of lithium, 4 mc/h of tritium was obtained with a 4×10^{12} n/cm^2 s neutron flux. The total yield of the products depends on the amount of tritium yielded by the crystals, and, so, on the irradiation conditions. The yield from the separate components is determined by analysis. A preparation column is described for separating tritium labeled cyclohexane, cyclohexene and methyl cyclopentane from irradiated cyclohexene and for separating the products yielded by the reaction of tritium recoil atoms with other cyclic hydrocarbons.

Nikolinski, P., Mladenov, Iv. and others.
SYNTHESIS OF NITROALCOHOLS AND NITROBUTADIENE. [1963] 9p.
Order from ATS $13.75 ATS-74Q69B

Trans. of Khimiko-Tekhnologicheskii Institut, Sofia Godishnik (Bulgaria) 1959, v. 6, no. 2, p. 95-106.

DESCRIPTORS: Synthesis (Chemistry), *Nitro radicals, *Alcohols, *Butadienes.

Nishizawa, Yoshihiko.
FORMATION OF GLUTAMIC ACID FROM LEVULINIC ACID. [1963] 3p. 6 refs.
Order from SLA $1.10 63-14612

Trans. of [Nihon Kagaku Zasshi] (Japan) 1954, v. 75, p. 348.

DESCRIPTORS: *Glutamic acid, *Valeric acids, Methyl radicals, Oxidation-reduction reactions.

Ost, H. and Brodtkorb, T.
DECOMPOSITION OF DEXTROSE BY DILUTE SULFURIC ACID. [1963] 10p. 5 refs.
Order from SLA $1.10 63-14246

Trans. of Chem[iker] Z[eitung] (Germany) 1911, v. 35, p. 1125-1126.

DESCRIPTORS: *Decomposition, *Glucose, *Sulfuric acid, Temperature, Reduction (Chemistry), Discoloration, Fermentation.

Page, Jean le and Jungers, Joseph-Charles.
CATALYTIC HALOGENATION IN CONCENTRATED MEDIUM. IV. CHLORINATION OF AROMATIC HYDROCARBONS, ACTIVATED WITH STANNIC CHLORIDE. [1963] 18p. (figs. tables omitted) 8 refs.
Order from SLA $1.60 63-14236

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1960 [no. 3] p. 525-533.

DESCRIPTORS: *Hydrocarbons, Halogenation, *Chlorination, Catalysts, Chlorides, *Tin compounds, Reaction kinetics, Complex compounds.

The chlorination of aromatics, activated with stannic chloride, corresponding to the order one in relation to chlorine, hydrocarbon and catalyst, lends itself particularly well, because of its simple kinetics, to demonstrating the associations taking place in the reaction mixture. Kinetic analysis of this effect indicates, in agreement with the conclusions of sprectrographic studies, that the chlorine is to a great extent associated with the hydrocarbon, while the stannic chloride remains almost intirely in the free state. Thanks to this information, it is possible to coordinate perfectly the results obtained for the relative reactivity of hydrocarbons by reacting them in isolating in weak dilution, concurrently in the same medium, or alone in the pure state. (Author)

Pshezhetskii, S. Ya.
MECHANISM OF RADIATIONAL-CHEMICAL REACTIONS, CHAPS. 5-6 AND 8. 26 June 63, 118p. 343 refs. JPRS: 19876.
Order from OTS $2.50 63-31125

Trans. of mono. Mekhanizm Radiatsionno-Khimicheskikh Reaktsii, Moscow, 1962, p. 195-276, 311-350.

DESCRIPTORS: *Radiation chemistry, *Hydrocarbons, Organic compounds, *Radiolysis, Chemical reactions, *Alkyl radicals, *Halides, *Alcohols, *Organic acids, *Ketones, Esters, Polymers, Ions, Free radicals, Bibliographies, Methanes, Ethanes, Propanes, Acetylenes, Ethylenes.

Contents:
Radiational conversion of hydrocarbons
Radiational conversions of several organic compounds
Features of radiational-chemical reactions in condensed phases.

Rafikov, S. R., Suvorov, B. V. and others.
OXIDIZING AMMONOLYSIS OF m-XYLENE. COMMUNICATION 32 on Oxidation of Organic Compounds. 12 Mar 63 [11]p. 12 refs. FTD-TT-62-1877.
Order from OTS or SLA $1.60 63-19326

Unedited rough draft trans. of Akademiya Nauk Kazakhskoi SSR [Alma Ata]. Izvestiya. Seriya Khimicheskaya, 1962 [v. 7] no. 1(21), p. 67-71.

DESCRIPTORS: Organic compounds, *Xylenes, Oxidation, Reagents, *Ammonia, Catalysts, Tin compounds, Vanadates, *Phthalic acids, *Nitriles, Synthesis.

The reaction of oxidizing ammonolysis of m-xylene with a catalyst of stannous vanadate was studied. It was shown that the basic product of the process is isophthalodinitrile. With a hydrocarbon: air: ammonia ratio of 1:80:3, contact period of 0.4 sec, and reaction temperature of 390° its yield reached 60% of that theoretically calculated for the substance taken. The reaction studied may be recommended as a method of synthesizing the dinitrile of isophthalic acid. (Author) (See also 61-11006)

Tur'yan, Ya. I. and Smekalova, V. V.
A POLAROGRAPHIC STUDY OF THE EQUILIBRIUM OF THE REACTIONS OF FORMALDEHYDE WITH NITROALKANES AND NITROCYCLOHEXANE. [1963] 7p.
Order from ATS $7.75 ATS-47Q68R

Trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1962, v. 35, no. 12, p. 2729-2734.

DESCRIPTORS: *Cyclohexanes, *Nitro radicals, *Formaldehyde, Chemical reactions, Chemical equilibrium, Polarographic analysis, *Nitrogen compounds, *Alkanes.

Unterguggenberger.
THE REACTION OF CARBON TETRACHLORIDE WITH SODIUM ETHYLATE. 6 Jan 48, 5p.
Order from OTS or SLA $1.10 63-10953

Trans. from unidentified German mono. pub. by Alexander Wacker G.m.b.H., Munich, n.d. (PB-70388C).

DESCRIPTORS: Chemical reactions, *Carbon tetrachloride, *Sodium compounds, Alcohols, Ethyl ethers, Alkoxy radicals.

While carbon tetrachloride reacts under suitable conditions with sodium methylate with the formation of trimethylorthoformate, the analogous reaction with sodium ethylate even under the mildest conditions gave a yield of only 7% of the corresponding triethylorthoformate. The principal reaction consisted in the splitting of alcohol out of the sodium ethylate. At the same time, a brown humin-like substance formed, the constitution of which was not established. (Author)

Wichterle, O. and Rocek, J.
BECKMANN REARRANGEMENT OF CYCLOHEXANONE OXIME: KINETICS OF THE TERMINATION OF THE REACTION, PT. 2. [1963] 3p.
Order from ATS $6.00 ATS-19Q69C

Trans. of Chem[icke] Listy (Czechoslovakia) 1951, v. 45, p. 379-380.

DESCRIPTORS: *Cyclohexanones, *Oximes, Chemical reactions, Reaction kinetics.

Physical Chemistry

IMPROVEMENTS IN THE MANUFACTURE OF CATALYSTS. [1963] [18]p.
Order from OTS or SLA $1.60 63-16403

Trans. of Belgian patent 592,605, by United Coke and Chemicals Co., Ltd. (Priority for a pat. appl. in Great Britain, 3 July 59, 22,973/59).

DESCRIPTORS: *Catalysts, Production, Aluminum compounds, Charcoal, Chlorides, Chromium compounds, Cobalt compounds, Copper compounds, Dioxides, Gels, Glass, Hydrates, Nickel compounds, Nitrates, Oxides, Potassium compounds, Silicon compounds, Silver compounds, Sulfates, Tin compounds, Vanadium compounds.

Catalytic material, in the form of solid particles, is introduced into a fluidized bed of porous particles. The bed is maintained at a temperature at which the catalytic material melts and moistens the porous particles in such a way that the resulting liquid spreads on the porous particles and is absorbed or adsorbed. These porous particles are supports for the catalytic material. The catalytic material should be completely fixed by the supporting particles but should not form a thick continuous layer on the exterior surface in such a manner as to cause the mass of particles to bind when used as a catalyst. The supporting particles can consist of a silica gel, activated alumina, pumice stone, zeolites, metallic earths or oxides, provided that they are porous and stable at the fluidization temperature. Catalytic materials described are a glass of vanadium oxide and potassium pyrosulfate, silver nitrate, chromium chloride, copper chloride, a compound of nickel and cobalt oxide. An installation in which the process can be put into practice is described.

Ans, J. d'.
NaCl-KCl-H_2O. [1963] 5p.
Order from SLA $1.10 63-14560

Trans. of unidentified article, n.p., 1933, p. 63-64.

DESCRIPTORS: *Chlorides, *Sodium compounds, *Potassium compounds, *Water, *Phase studies, Chemical equilibrium, Solubility.

Aristov, B. G., Karnaukhov, A. P., and Kiselev, A. V.
SIMULTANEOUS ADSORPTION AND CAPILLARY CONDENSATION. PT. 3 [of] a Contribution to the Theory of the Corpuscular Structure of Adsorbents. [1963] 9p.
Order from ATS $12.65 ATS-28Q69R

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, no. 10, p. 2153-2161.

DESCRIPTORS: *Adsorbents, Theory, Capillary tubes, *Adsorption, Condensation reactions.

Belyaev, A. F. and Belyaeva, A. E.
DEPENDENCE OF COMBUSTION RATE OF PRIMING EXPLOSIVES UPON PRESSURE. [1963] 6p. 12 refs.
Order from OTS or SLA $1.10 63-14390

Trans. of [Akademiya Nauk SSSR. Doklady] 1947, v. 56, no. 5, p. 491-494.

DESCRIPTORS: *Combustion, *Primers, Pressure, Mercury compounds, Fulminates, Nitrobenzenes, Azo radicals, Polycyclic compounds, Acetones, Peroxide, *Explosive materials.

Benoy, G. and Jungers, J. C.
STUDY OF SELECTIVITY IN PHOTOCHEMICAL CHLORINATION. [1963] 24p. (figs. tables omitted) 8 refs.
Order from SLA $2.60 63-14230

Trans. of Soc[iété] Chim[ique de] Belg[ique]. Bull[etin] 1956, v. 65, p. 769-793.

DESCRIPTORS: *Photochemistry, *Chlorination, *Toluenes, *Xylenes, *Benzenes, *Cyclohexanes, Reaction kinetics, Substitution reactions.

In work with the photochemical chlorination of toluene, xylenes, ethyl benzene, cyclohexane and their chlorinated derivatives, the conditions must first be determined under which the desired reaction can be carried out while excluding parasite reactions, catalytic substitution and photochemical addition, which are often extremely rapid. It was possible thus to define the kinetics of the photochemical substitution which is carried out in a series of successive reactions, and to determine the speed constant for the various steps. Consequently, this study permits the determination of the optimum conditions for the preparation of a certain member in the series of chlorinate derivatives. (Author)

Bezdel, L. S., Brounshtein, B. I. and others.
EXTRACTION OF H_2S FROM A LIQUEFIED PROPANE-PROPYLENE FRACTION BY A K_3PO_4 SOLUTION IN A COUNTERCURRENT COLUMN, PT. 2. [1963] 9p.
Order from ATS $10.25 ATS-20Q67R

Trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1962, v. 35, no. 8, p. 1715-1722.

DESCRIPTORS: *Solvent extraction, *Hydrogen compounds, *Sulfides, *Propanes, *Propenes, Distillation, *Potassium compounds, *Phosphates, Solutions, *Towers (Chemistry).

Budnikov, P. P. and Gnistling, A. M.
REACTIONS IN MIXTURES OF SOLIDS. 18 Apr 63 [569]p. 681 refs. FTD-TT-62-911. AD-402 799.
Order from OTS or SLA $26.00 63-19321

Unedited rough draft trans. of mono. Reaktsii v Smesyakh Tverdykh Veshchestv, Moscow, 1961, 424p.

DESCRIPTORS: *Solids, Mixtures, Physical properties, Chemical properties, *Chemical reactions, *Crystal structure, Powders, Heating, *Thermal diffusion, Crystallization, Melting, *Phase transitions, *Crystal growth, *Thermodynamics, *Thermochemistry, *Reaction kinetics, *Sublimation, Adsorption, Calorimetry, Thermal expansion, X-ray diffraction analysis Electron microscopy, Tracer studies, *Spinels, *Titanates, *Stannates, *Zirconates, *Silicates, *Ceramic materials, *Refractory materials, *Adhesives, *Cements.

The present monograph illuminates the theory, methods of study, and range of application of reactions in mixtures of solid substances, which form the basis for preparation of many important structural and various other types of materials. In addition to describing the structure and physicochemical properties of crystalline bodies and their behavior on heating, which is associated, among other things, with processes of diffusion, sintering, recrystallization, fusion, sublimation and polymorphic transformations, the book examines the mechanism, thermodynamics, kinetics, classification principles, and methods of controlling the rate of chemical reactions in solids. The results of numerous investigations of the processes in which spinelides, titanates, zirconates, silicates and other technically important compounds are formed by reactions in crystalline mixtures are presented. The applications of the above reactions in the technology of adhesives, refractory materials, and ceramic products are examined. Certain basic problems and study trends for reactions in solids are examined in the light of the most important problems of the country's technical progress. (Author)

Cornec, E. and Kromback, H.
[EQUILIBRIA BETWEEN WATER, POTASSIUM CHLORIDE, AND SODIUM CHLORIDE BETWEEN -23°C AND 190°C]. I. EQUILIBRIA FROM 0° TO BOILING. [1963] 3p. (figs. omitted).
Order from SLA $1.10 63-14549

Partial trans. (p. 6-9) of Annales de Chimie (France) 1932, ser. 10, v. 18 [p. 5-31].

DESCRIPTORS: *Potassium compounds, *Sodium compounds, *Chlorides, Water, Chemical equilibrium, Temperature, Solubility, Density.

Debierne, André and Goldstein, Ladislas.
NEW TRANSFORMATIONS PRODUCED AT LOW TEMPERATURES (Frigadreactions). 24 Mar 61, 2p.
Order from SLA $1.10 63-10354

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1937, v. 205, p. 321-322 (pub. by Gauthier-Villars et Cie., Paris)

DESCRIPTORS: Thermochemistry, Low temperature research, *Transformations, Adsorption, Helium, Hydrogen, Carbon, Cryogenics, Nuclear reactions.

At the temperature of liquid nitrogen, a brisk reaction is produced between hydrogen or helium and carbon when the latter has been freed of gas. This reaction gives rise to an intense thermal effect, whose energy, relative to the mass of gas introduced, must reach at least several hundred million calories per gram molecule. The hypothesis is given that nuclear transformations are present. These reactions are given the name of "frigadreactions."

Dolique, R. and Pauc, M.
THE SYSTEM POTASSIUM CHLORIDE - POTASSIUM SULFATE - WATER AT 20°C. [1963] 3p. 4 refs.
Order from SLA $1.10 63-14546

Trans. of Soc[iété de] Pharm[acie de] Montpelier. Trav[aux] (France) 1946/47, v. 6, p. 89-91.

DESCRIPTORS: *Potassium compounds, *Chlorides, *Sulfates, Water, Solubility, Solutions, Density.

Topics include: Solubility in water of potassium chloride in the presence of potassium sulfate at 20°C; determination of the "two-salt" point; absence of double salts and mixed salts; and specific gravity of the solutions.

Dubinin, M. M.
SPECIFIC SURFACE AREA OF FINELY POROUS ADSORBENTS. PT. 1. EVALUATION OF THE FORMAL GEOMETRICAL SURFACE AREA OF THE ALUMINOSILICATE FRAMEWORKS OF DEHYDRATED CRYSTALS OF TYPES A AND X SYNTHETIC ZEOLITES. [1963] 6p.
Order from ATS $10.00 ATS-97Q67R

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, no. 8, p. 1806-1809.

DESCRIPTORS: *Surface area, *Porous materials, *Adsorbents, Aluminum compounds, Silicates, Dehydration, Crystals, Synthetic stones.

Ercoli, R., Signorini, G., and Santambrogio, E.
KINETICS OF THE HYDROCARBOXYLATION OF OLEFINS. [1963] [39]p. 16 refs.
Order from SLA $3.60 63-14402

Trans. of la Chimica e l'Industria (Italy) 1960, v. 42, no. 6, p. 588-598.

DESCRIPTORS: *Cyclohexenes, *Reaction kinetics, *Carbon compounds, *Monoxides, Water, Acetones, Pressure, *Heat of activation, Carbonyl radicals, Benzoic acids, Cobalt compounds.

The kinetic study of the hydrocarboxylation of cyclohexene with carbon monoxide and water in the liquid phase under pressure with acetone as solvent and dicobalt-octacarbonyl as catalyst gave the following results: The reaction appears to be of 1/2 order with respect to the olefin and of first order with respect to the water. The reaction is characterized by a rate maximum for carbon monoxide pressures between 170-220 kg/cm^2 at 156.5°C; at lower pressures, the reaction rate is nearly proportional to the carbon monoxide pressure, while it decreases progressively at higher pressures until it is nearly inversely proportional to the pressures at values above ~350 kg/cm^2. The reaction rate depends on the cobalt concentration to an extent which is below proportionality. The apparent energy of activation decreases considerably with the temperature increase from ~23,000 to ~19,000 cal/mole in the temperature intervals of 147.0-156.5 and 156.5-166.5°C. The results obtained are compared with those of earlier studies of the kinetics of hydroformylation and hydroesterification and the kinetic characteristics common to the three reactions are discussed. (Author)

Guyer, A., Bieler, A., and Schmid, E.
SOLUBILITY OF ALKALI CHLORIDES AND ALKALI NITRATES IN AMMONIA-WATER MIXTURES. 31 Oct 57, 5p. (figs. omitted).
Order from SLA $1.10 63-14035

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1934, v. 17, p. 1530-1535.

DESCRIPTORS: *Chlorides, *Nitrates, *Sodium compounds, Solubility, Alkali metal compounds, Ammonia, Water, Mixtures.

Haase, L. W.
ABOUT A NEW FORM OF SOLID CARBON DIOXIDE AND ITS PRACTICAL APPLICATION. [1963] [10]p. 2 refs.
Order from SLA $1.10 63-16492

Trans. of special print of Dechema Monographien (West Germany) [1959] v. 33, no. 477/502, p. 269-277.

DESCRIPTORS: *Carbon compounds, *Dioxides, *Aerosols, Containers, Absorption, Solvents, Solidified gases.

Hofmann, Ulrich and Giese, Kurt.
CATION EXCHANGE IN CLAY MATERIALS. [1963] 36p. 37 refs.
Order from SLA $3.60 63-16261

Trans. of Kolloid-Zeitschrift (Germany) 1939, v. 87, no. 1, p. 21-36.

DESCRIPTORS: *Clay minerals, *Clay, *Ion exchange, Ions, X-ray diffraction analysis, Electrodialysis.

Istratov, A. G. and Librovich, V. B.
COMPUTING THE SPEED OF THE NORMAL PROPAGATION OF A FLAME IN A MIXTURE OF HYDROGEN AND CHLORINE. 18 Feb 63 [10]p. 12 refs. FTD-TT-62-1687; AD-299 849.
Order from OTS or SLA $1.10 63-19557

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 6, p. 1380-1383.

DESCRIPTORS: Flames, *Flame propagation, Velocity, Hydrogen, Chlorine, Mixtures, Combustion, Chain reactions, *Reaction kinetics.

Iwakami, Y.
THE MELTING-POINT DEPRESSION OF WATER IN SORBED STATE, tr. by K. Shimizu. 1962, 12p. 5 refs. NRCC Technical Trans. 1010.
Order from NRCC $1.00 NRCC C-3950

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80, no. 10, p. 1094-1097.

DESCRIPTORS: *Water, *Adsorption, *Adsorbents, Porous materials, Melting, Freezing point depressants, Ion excharge resins, Cobalt.

Kellerman, V. and Tsyurupa, I. G.
THE STRENGTH OF BONDS OF IRON FILMS WITH MINERALS ENCOUNTERED IN SOILS (K Voprosu o Prochnosti Svyazi Zhelezistykh Plenok s Mineralami, Vstrechayushchimisya v Pochve) tr. by P. Thistlethwaite. [1963] [30]p. (foreign text included) 16 refs. CSIRO Trans. no. 5877.
Order from OTS or SLA $2.60 63-19152

Trans. of #Pochvovedenie (USSR) 1962, no. 1, p. 74-83.

DESCRIPTORS: *Iron, *Films, Chemical bonds, *Minerals, Soils, Surface properties, Separation, Reagents, Quartz, Silicon compounds, Oxides, Aluminum compounds, Silicates, Iron compounds, Hydroxides, Helium, X-ray diffraction analysis, Heat, Crystallization, Stability, Solubility.

Bond stability was investigated of artificial ferriferous films with quarts of different particle size, amorfous silica acid, microcline, kaolinite, muscovite and bentonite. It has been stated that ferriferous films are very tightly bound with above minerals. After heating at 250—450° and cristallization of the ferric oxide, stability of the films increased and their solubility in various reagents decreased but did not stop. The character of the bond of ferriferous films with the mineral surfaces depends upon physico-chemical and structural properties of the latter. (Author)

Kutzelnigg, A.
INVESTIGATIONS CONCERNING OXIDATION CATALYSIS. Communication 3. [1963] 7p. 20 refs.
Order from SLA $1.10 63-14124

Trans. of Monatshefte für Chemie (Austria) 1936, v. 67, p. 241-247.

DESCRIPTORS: *Oxidation, *Catalysis, *Oxides, *Chromium compounds, Iron compounds, Copper compounds, Potassium compounds, Cyanides, Reaction kinetics, Chemical reactions, *Catalysts.

It was attempted to trace the activity of the chrome oxide as oxidation catalyst in various temperature ranges to a common cause. Besides chrome oxide, ironoxide and copper oxide at a specific preparation temperature also show a maximum of activity in regard to oxidation of ferrocyanide. This phenomenon is connected with the removal of adsorbed H_2O films from the powder. While animal charcoal in alkaline solution, boosts the reduction of K_3Fe (CN) 6, the same holds good under comparable circumstances only for pyrulosite (MnO_2) and Fuller's earth in a limited range, but does not apply for other oxides like NiO, Fe_2O_3, PbO_2 and CuO. The active or inactive respective oxides at the oxidation of K_4Fe $(CN)_6$ show the same relation at such reactions which lead to the oxygen evolution, viz. the decomposition of $KClO_3$, $KMnO_4$, HgO, Ag_2O, and H_2O_2. The catalytic active elements are situated at the atom-volume cure as minima. The most active oxidation catalysts are the oxides of the transfer elements: V, Cr, Mn, Fe, Co, Ni, Cu. (Author)

Lorenz, Richard and Winzer, Robert.
THE CALCIUM-SODIUM PHASE DIAGRAM. [1963] 7p. 5 refs. (figs. omitted).
Order from SLA $1.10 63-16040

Trans. of Z[eitschrift für] Anorg[anische] und Allg[emeine] Chem[ie] (Germany) 1929, v. 179, p. 281-286.

DESCRIPTORS: *Calcium compounds, *Sodium compounds, *Phase studies, Fused materials, Electrolysis, Physical properties.

Some of the effects observed in fusion electrolysis are explained.

Mendelev, D. I. and Gutkovskii, E. K.
THE DEPRESSION OF MERCURY IN TUBES. [1963] 2p. 4 refs.
Order from OTS or SLA $1.10 63-14307

Trans. of [Russkoe Fiziko-Khimicheskoe Obshchestvo. Zhurnal] 1876, v. 8, p. 212-214.

DESCRIPTORS: *Mercury, *Capillary tubes, Surfaces, Surface properties, Volume.

Muraour, Henri and Aunis, Gabriel.
REMARKS ON THE SUBJECT OF THE RELATION BETWEEN THE TEMPERATURE OF EXPLOSION OF A COLLOIDAL POWDER AND THE RATE OF COMBUSTION. [PT. 2]. [1963] 5p.
Order from SLA $1.10 63-14052

Trans. of Acad[emie des] Sci[ences] Paris. Compt[es] Rendus (France) 1949, v. 229, no. 16, p. 749-751 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Powders, *Explosive materials, Explosions, Temperature, Combustion, Thermochemistry.

Nishikawa, S. and Komatsu, K.
PRODUCTION OF UNIFORM DROPLETS IN LIQUID-LIQUID SYSTEMS. [1963] 9p.
Order from ATS $12.75 ATS-26Q68J

Trans. of Kagaku Kogaku (Japan) 1962, v. 26, no. 11, p. 1155-1160.

DESCRIPTORS: *Drops, Production.

Rabinowitsch, E.
THE PHOTOBROMINATION OF BENZENE. [1963] 15p. 2 refs.
Order from SLA $1.60 63-14813

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (Germany) 1932, v. 19B, p. 190-[198].

DESCRIPTORS: *Benzenes, *Bromination, *Photochemical reactions, Thermochemistry, Addition reactions, Substitution reactions, *Lighting systems, Design.

A description is given of a strong intensity monochromator. An estimation of the quantum yield from the bromination of benzene in relation to the wave length, light intensity, concentration and temperature is given and a comparison is made with earlier measurements. A discussion of the thermal and photochemical bromination is included.

Razuvaev, G. A., Minsker, K. S., and Shapiro, I. Z.
COPOLYMERIZATION OF STYRENE WITH PROPYLENE IN THE PRESENCE OF A HETEROGENEOUS ZIEGLER-NATTA CATALYTIC SYSTEM. [1963] 6p.
Order from ATS $8.80 ATS-05Q69R

Trans. of Vyzokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 12, p. 1833-1838.

DESCRIPTORS: *Copolymerization, Styrenes, *Propenes, Catalysis, Ziegler catalysts.

Rozlovskii, A. I.
KINETICS OF THE DARK REACTION OF THE CHLORINE-HYDROGEN MIXTURE. III. NORMAL COMBUSTION OF CHLORINE-HYDROGEN MIXTURES IV. KINETICS AND MECHANISM OF REACTION IN FLAME. 1 Apr 63 [41]p. 31 refs. FTD-TT-62-1688.
Order from OTS or SLA $4.60 63-19257

Unedited rough draft trans. of Zhurnal Fizicheskoi Khimii (USSR) 1956, v. 30, no. 11, p. 2489-2498 and no. 12, p. 2713-2723.

DESCRIPTORS: *Hydrogen, *Chlorine, Mixtures, Chemical reactions, *Combustion, Reaction kinetics, *Thermodynamics, Stability, *Flame propagation, Velocity temperature, Pressure, Hydrogen compounds, Chlorides, Synthesis.

Topics include:
Thermodynamic calculations for state of combustion products; combustion of binary $H_2 + Cl_2$ mixtures; influence of reaction-product additives and content of excess component on speed of flame; the stability of normal combustion in chlorine-hydrogen mixtures; calculation of true temperature and baric coefficients of reaction rate in flame; analysis of the influence of partial substitution of the excess component by hydrogen chloride on the kinetics of the reaction; absolute values of reaction rate in flame; and, reaction mechanism in flame and conditions for generation of active centers.

Ryabinin, Yu. N.
INFLUENCE OF PRESSURE ON PERIODIC PROPERTIES OF ELEMENTS (Vliyanie Davleniya na Periodicheskie Svoistva Elementov) tr. by Zanis Stuberovskis. July 62 [8]p. 9 refs. E-T-R-R-62-34; AD-290 676.
Order from OTS or SLA $1.10 63-15728

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 104, no. 5, p. 721-724.

DESCRIPTORS: *Chemical elements, *High pressure research, *Alkali metals, *Alkaline earth metals, Atomic number, Volume, Physical properties, Quantum mechanics, Barium, Cesium, Calcium, Potassium, Rubidium, Strontium, Atoms, Mathematical analysis.

Sainte-Claire Deville, H.
ABOUT THE DISSOCIATION OR SPONTANEOUS DECOMPOSITION OF MATERIALS UNDER THE INFLUENCE OF HEAT. [1963] 7p.
Order from SLA $1.10 63-16149

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1857, v. 45, no. 21, p. 857-861 (pub. by Gauthier-Villars et Cie Paris).

DESCRIPTORS: *Dissociation, Heat, *Water, Silver, Lead compounds, Oxides, Aluminum compounds, Sulfates, *Sodium compounds, *Hydroxides, *Potassium compounds, Hydrogen, Oxygen, Zinc compounds, Decomposition, Materials, *Pyrolysis.

Sanger, Eugen.
THEORY OF PROPELLANT BURNING. [1963] 9p. (figs. omitted).
Order from SLA $1.10 63-14053

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (East Germany) 1951, v. 197, p. 265-276.

DESCRIPTORS: *Propellants, Combustion, Theory, Powders, Thermochemistry, Velocity, Pressure, Temperature, Solids.

Schläpfer, P., Audykowski, T., and Bukowicki, A.
STUDY OF MAXIMUM OXYGEN ABSORPTION BY ORGANIC LIQUIDS AND IODOMETRIC DETERMINATION OF ABSORBED OXYGEN. [1963] 20p. 15 refs.
Order from SLA $1.60 63-14655

Trans. of Schweizer Archiv für Angewandte Wissenschaft und Technik, 1949, v. 15 [no. 10] p. 299-307.

DESCRIPTORS: *Oxygen, *Absorption, Organic materials, Liquids, *Volumetric analysis, *Iodine, Determination, Ethanols, Benzenes, *Alcohols, Solubility, Surface tension,

The purpose of this investigation was to study the possibility and accuracy of iodometric determination of oxygen absorbed by different organic liquids. Experiments showed that this method may be applied to monovalent alcohols, acetone, acetic acid esters, ether, methylal, chlorinated and ether hydrocarbons. The accuracy of the determination is at the most, ± 2.5%. However, this determination is not applicable to aniline, paraldehyde, dioxane, glycerin, and ethylene glycol, which react either with iodine or with potassium iodide. Usually, the experiments were carried out with liquids saturated with air at 20°C, and the results obtained were controlled by known absorption methods. In addition, also the oxygen content in ethanol and benzene saturated with air at different temperatures between 10 and 70°C, and the oxygen absorption by different alcohol-water mixtures were determined. Finally, the relationship between the solubility of gases and the surface tension of the solvents found by Uhlig was studied, and it was found that this relationship holds true with close approximation for most liquids (with the exception of alcohols). (Author)

Semenkovich, S. A.
ALUMINUM MONOFLUORIDE (AlF). [1962] [8]p. 8 refs.
Order from OTS or SLA $1.10 63-13588

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Alyuminievo-Magnievyi Institut. Trudy (USSR) 1960, no. 44, p. 113-119.

DESCRIPTORS: *Aluminum compounds, *Fluorides, Aluminum, Chemical reactions, Hydrogen, Argon, Enthalpy, Chemical equilibrium, Thermodynamics, Vapor pressure, Temperature.

The paper reports the results of a study of the reaction: $2Al_{liq.} + AlF_{3\,sol.} \rightleftharpoons 3AlF_{gas}$. The reaction was studied by the "transfer" method. Hydrogen, or in some cases argon, was used as the "carrier" gas. The equilibrium vapor pressure of monofluoride was established as three-quarters of the pressure obtained for various rates of gas flow, by graphically extrapolating the curve plotted from these points to "zero" velocity. (Author)

Shirasaki, T. and Ozaki, A.
STRUCTURE AND TEXTURE OF COKE DEPOSITS ON CATALYST SURFACES. [1963] 7p.
Order from ATS $9.00 ATS-30Q70J

Trans. of Shokubai (Japan) 1962, v. 4, no. 1, p. 88-92.

DESCRIPTORS: *Coke, *Catalysts, Films, Physical properties.

Slyusarov, I. T. and Urazovskii, S. S.
A STUDY OF CONFORMATIONAL CHANGES IN MACROMOLECULES IN SOLUTIONS. III. CONFORMATIONAL CHANGES IN 2-VINYLPYRIDINE-METHACRYLIC ACID COPOLYMER. 14 Jan 63 [11]p. 7 refs. FTD-TT-62-1572. AD-298 215.
Order from OTS or SLA $1.60 63-19085

Unedited rough draft trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962 [v. 4] no. 4, p. 481-485.

DESCRIPTORS: *Polymers, Solutions, Physical properties, Molecular properties, *Vinyl radicals, *Pyridines, Methyl radicals, *Acrylic acids, Temperature, Viscosity, Electrical conductance Hydrogen ion concentration, Molecular association, Chemical bonds.

A study was made of the temperature dependence of the specific viscosity, electrical conductivity, and hydrogen-ion concentration of aqueous solutions of vinylpyridine-methacrylic acid copolymer in acid and alkali media over a wide range of pH, and also the viscosity of water-methanol and dimethylformamide solutions at concentrations from 0.05 to 1 g/dl in the temperature range from 20 to 60°. (Author)

Tammann, G. and Veszi, G.
PRODUCING REVERSIBLE COLOR CHANGING IN DOUBLE IODIDES BY RUBBING (Durch Reiben Erzeugte Reversible Farbenänderungen von Doppeljodiden). [1963] [6]p. (foreign text included).
Order from SLA $1.10 63-16304

Trans. of Zeitschrift f[ür] Anorganische u[nd] Allgemeine Chemie (Germany) 1927, v. 168, p. 46-48.

DESCRIPTORS: *Colors, *Iodides, Friction, Temperature.

Thilemus, R.
THE ELECTROCHEMICAL BEHAVIOUR OF THE ALKALI METALS. [1963] 7p.
Order from SLA $1.10 63-16165

Trans. of Zeitschrift für Elektrochemie (Germany) 1931, v. 37, no. 8/9, p. 740-742.

DESCRIPTORS: *Alkali metals, *Electrochemistry, Electrolysis, Fused materials, Chlorides, Sodium compounds.

Vereshchagin, L. F. and Likhter, A. I.
DEPENDENCE OF THE COMPRESSIBILITY OF ELEMENTS ON THE ATOMIC NUMBER (Zavisimost' Szhimaemosti Elementom ot Atomnovo Nomera) tr. by Zanis Stuberovskis. July 62 [7]p. 14 refs.
E-T-R-R-62-33; AD-290 677.
Order from OTS or SLA $1.10 63-15729

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 4, p. 745-747.
Other translations are available from Insdoc, Indian National Scientific Documentation Centre, National Physical Laboratory of India, Hillside Road, New Delhi-12, India as T. 674 and from SLA as RT-3255.

DESCRIPTORS: *Chemical elements, *High pressure research, *Alkali metals, *Alkaline earth metals, Mathematical analysis, Volume, Physical properties, Quantum mechanics, Atomic number, Barium, Cesium, Cerium, Calcium, Potassium, Rubidium, Strontium, Phase transitions, Atoms.

Wasilewski, Ludwik, Swatek, S., and Gnot, W.
MERCURY LOSSES IN MERCURY ELECTROLYSIS OF SODIUM CHLORIDE. I. ANALYSIS OF INDUSTRIAL LOSSES OF MERCURY. [1963] 10p. 2 refs.
Order from SLA $1.10 63-14113

Trans. of Przemysl Chemiczny (Poland) 1961, v. [17](40) no. 4, p. 203-206.

DESCRIPTORS: *Mercury, *Electrolysis, Sodium compounds, Chlorides, Solvent action, Electrochemistry

Losses of mercury in brine occur both during the electrolysis process and when the current is turned off. The main losses of mercury occur in salt slimes and in brines drawn off during circulation. These saline slimes and brines contain both dissolved and undissolved mercury. The amounts of mercury include various concentrations of mercury in the brines, accumulating in the tank and left behind in the saline slimes. The amount of mercury dissolved in the brine varies greatly for different electrolysers; The average concentration of mercury in the brines deposited in the electrolyser amounted to C_k = 12.0 mg. per liter. (Author)

Wasilewski, Ludwik, Gnot, W., and Swatek, S.
MERCURY LOSSES IN MERCURY ELECTROLYSIS OF SODIUM CHLORIDE. III-IV. INFLUENCE OF CURRENT CUT-OFF IN INDUSTRIAL ELECTROLYSERS ON LOSSES OF MERCURY IN THE ELECTROLYTIC PRODUCTION OF CHLORINE. [1963] 10p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-14114

Trans. of Przemysl Chemiczny (Poland) 1961, v. [17](40) no. 7, p. 375-379.

DESCRIPTORS: *Mercury, *Electrolysis, Sodium compounds, Chlorides, Electric currents, Chlorine, Electrochemistry, Solvent action.

Cutting off electrolyser current in quarter-industrial scale (pilot) units causes a migration of mercury from the unpolarized cathode to the brine. Maximum mercury content dissolved in brines during cut-off was 170 mg

Weiner.
CONCERNING THE POSSIBILITY OF OBTAINING CALCIUM FROM CALCIUM CHLORIDE AND SODIUM. 16 Nov 48, 7p. 23 refs.
Order from OTS or SLA $1.10 63-10967

Trans. from unidentified German mono. pub. by Deutsche Gold- und Silberscheideanstalt A.G., Frankfurt a.M., n.d. (PB-74417B).

DESCRIPTORS: *Calcium, Calcium compounds, *Chlorides, *Sodium compounds, Chemical equilibrium, Electrodes, Electric potential, *Electrochemistry, Thermochemistry.

A critical review of the literature.
per liter (with mercury circulation) and 180 mg per liter, without mercury circulation. The decreased mercury content in the brine, while maintaining mercury circulation, is caused by the presence of undissolved Hg_2^{2+} bonds. It does not decrease mercury losses when the current is turned off. The minimum cathode density of polarizing current which prevents mercury losses during electrolyser current cut-off is 9.755 A/m^2. (Author) (See also 63-14113)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 220 (EARTH SCIENCES SERIES). 26 June 63 [13]p. JPRS: 19888.
Order from OTS $0.50 63-31135

Abstract trans. of Agrokemia es Talajtan (Hungary) 1963, v. 12, no. 1, p. 1-188.

DESCRIPTORS: *Abstracts, *Geophysics, Scientific personnel, Fertilizers, *Agriculture, Soils, Microorganisms, Viscosity, Clay minerals, Calcination, Potatoes, Chemical analysis, *Hungary.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 234 (EARTH SCIENCES SERIES). 3 July 63, 11p. JPRS: 20016
Order from OTS $0.50 63-31202

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, *Geophysics, Geodesics, Astronomical geodesics, Gravimeters, Maps, Terrain, Oscillation, Microseisms, Petrology, Magnet properties, Climatology, Scientific personnel, Meteorology, Atmospheric temperature, Barometric pressure, Atmospheric motion, Hydrology, *East Germany, *Czechoslovakia.

ACTA GEOPHYSICA SINICA, 1959, VOL. 8, NOS. 1-2 [AND] 1960, VOL. 9, NOS. 1-2: TABLE OF CONTENTS AND SELECTED ABSTRACTS, tr, by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, Geophysics 1, on Contract AF 19(604)8505. July 62 [21]p. Emmanuel Coll. Research Language Center rept. no. Geophys. 1
Order from OTS or SLA $2.60 62-33219

Trans. of table of contents and selected abstracts of Ti Ch'iu Wu Li Hsüeh Pao (Chinese People's Republic) 1959, v. 8, nos. 1-2 and 1960, v. 9, nos. 1-2.

DESCRIPTORS: *Geophysics, *China, Indexes, *Abstracts, *Seismographs, Design, Construction, Terrestrial magnetism, Surface properties, Evaporation, Amplifiers, Faults (Geology), Geochemistry, Solar flares, Magnetic storms, Lightning, Spectrographic analysis, Microphotometers, Structural geology, Volcanoes, *Geophysical prospecting, Well logging, Instrumentation.

GEOMAGNETISM AND AERONOMY, 1961, VOL. 1, NO. 3, P. 265-405. Mar 63, 1v.
Order from AGU $20.00/year

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 3.

DESCRIPTORS: *Terrestrial magnetism, *Astrophysics, Cosmic rays, Atmosphere models, Venus, Mars, Magnetic storms, Anisotropy, Zodiacal light, Sounding rockets, Solar flares, Ionosphere, Electromagnetic fields, Diurnal variations, Marine geophysics, Magnetometers, Planetary atmospheres, *Atmosphere, Geophysics.

METEOROLOGY AND HYDROLOGY, 1950, NO. 2: [SELECTED ARTICLES]. [1963] [115]p. 18 refs.
Order from OTS or SLA $9.60 63-15311

Trans. of Meteorologiya i Gidrologiya (USSR) 1950, no. 2, p. 3-16, 34-45.
##Another trans. of p. 39-44 is available from SLA as RT-1013.

DESCRIPTORS: *Meteorology, *Hydrology, Construction, Research program administration, *Climatology, *Animal industry, Snow, *Ocean currents, Wind, Convection, *Earthquakes, *Rivers, Temperature, *Ice, Graphic analysis.

Contents:
Communism's great construction works and the aims of the hydrometeorological service
The question of climate and climatogenic factors, by K. I. Kashin and Kh. P. Pogsyan
Hydrometeorological service to the national economy, by N. P. Tomfel'd
Experience in hydrometeorological service to pastural stock-rainsing in Kazakhstan, by I. F. Porfir'ev and others
##Calculation of snow-cover density using meteorological data, by N. G. Dmitrieva
Suloys" off the southeastern coast of the Crimea, by G. V. Rzheplinskii
A graph-interpolator of wind velocity and direction for standard altitudes, by I. K. Troyan
A graph for calculation of the vertical temperature gradient, by M. S. Gol'dfarb
Earthquake recording at meteorological stations, by S. M. Koshcheev
Distinguishing the Mezhen' flow in rivers of Central Asia, by Z. V. Dzhordzhio

Short-range forecasts in a multitributary section, by R. A. Nezhikhovskii
Observations of river water temperature, by I. Ya. Liser

Problems of growth of an ice sheet and acceleration of its setting, by A. S. Ofitserov
Criticism and bibliography, by O. N. Borsuk and others.

METEOROLOGY AND HYDROLOGY, 1963, NO. 4: [SELECTED] TRANSLATIONS. 26 June 63, 60p. 10 refs. JPRS: 19879.
Order from OTS $1.75 63-31128

Trans. of Meteorologiya i Gidrologiya (USSR) 1963, no. 4, p. 3-15, 34-39, 42-44, 54-57, 59-63.

DESCRIPTORS: *Meteorology, *Hydrology, Cumulus clouds, Meteorological parameters, Statistical analysis, Scientific personnel, Training, Water supplies, Electromagnetic waves, Bibliographies, Scientific organizations, Exploration, Scientific research, Research program administration, Radiometers.

Contents:
Certain physical properties of orographic alto-cumulus lenticular clouds, by A. F. Dyubyuk and others
Objective analysis of certain meteorological elements with the use of statistical characteristics, by M. S. Tamarskaya
Training of meteorologist specialists, by I. V. But
Some development problems of the hydrological forecast service, by R. A. Nezhikhovskii
Problem of measurement of long-wave balance, by E. P. Novosel'tsev and N. E. Ter-Markaryants
Literature on meteorology and hydrology for 1962: articles in journals and collections
Main administration of the hydrometeorological service
Expeditionary research in the Far East
Scientific research establishments of the hydrometeorological service
Administration of the hydrometeorological service of the Ukrainian SSR
At the Kazan' branch of the Academy of Sciences USSR.

Geodesy

ACTIVITIES OF THE MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1889: [EXCERPTS]. [1962] [15]p. ACIC LD-59.
Order from OTS or SLA $1.60 63-13618

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1889, p. 69-71, 73-75, 77-80, 89-90, 94 (pub. 1892).

DESCRIPTORS: *Hydrographic surveying, Oceanology, *Triangulation, Geodesics, Astronomical geodesics.

ACTIVITIES OF THE MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1890: [EXCERPTS]. [1962] [9]p. ACIC LD-59.
Order from OTS or SLA $1.10. 63-13617

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1890 (pub. 1893) p. 59-61, 69-70, 75-76.

DESCRIPTORS: *Hydrographic surveying, *Black Sea, *Pacific Ocean, *Triangulation, Geodesics, Astronomical geodesics.

ACTIVITIES OF THE MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1891: [EXCERPTS]. [1962] [9]p. ACIC LD-59.
Order from OTS or SLA $1.10 63-13614

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1891, p. 58-60, 69-71, 75, 79-80, 110-111 (pub. 1894).

DESCRIPTORS: *Hydrographic surveying, *Caspian Sea, *Triangulation, Geodesics, Astronomical geodesics.

HYDROGRAPHIC WORK IN THE BAIKAL LAKES [IN] 1897: [EXCERPTS]. [1962] [5]p. ACIC LD-49.
Order from OTS or SLA $1.10 63-13608

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1897, p. 55-56 (pub. 1898).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Geodesics, Lakes.

HYDROGRAPHIC WORK IN THE BLACK AND AZOV SEAS AND IN THE PACIFIC AND ARCTIC OCEANS IN 1895: [EXCERPTS]. [1962] [12]p. ACIC LD-49.
Order from OTS or SLA $1.60 63-13610

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1895, p. 55-57, 64-65, 79-83 (pub. 1896).

DESCRIPTORS: *Hydrographic surveying, Oceanology, Black Sea, *Arctic regions, *Triangulation, Geodesics, Astronomical geodesics.

HYDROGRAPHIC WORK IN THE WHITE, BLACK AND AZOV SEAS INCLUDING HYDROGRAPHIC WORK PERFORMED BY PORTS AND VESSELS IN 1893; [EXCERPTS]. [1962] [15]p. ACIC LD-49.
Order from OTS or SLA $1.60 63-13612

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1893, p. 53-55, 64-68, 102-104 (pub. 1895).

DESCRIPTORS: *Hydrographic surveying, Black Sea, White Sea, *Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1908: [EXCERPTS]. [1962] [5]p. ACIC LD-50.
Order from OTS or SLA $1.10 63-19266

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1908, p. 78-81.

DESCRIPTORS: *Hydrographic surveying, Oceanology, *Triangulation, Geodesics, Astronomical geodesics.

Kozlov, F. M.
ATLAS OF THE USSR. 27 Feb 63 [8]p.
FTD-TT-62-1906. AD-400 518
Order from OTS or SLA $1.10 63-19255

Unedited rough draft trans. of #Geodeziya i Kartografiya (USSR) 1962, no. 8, p. 65-68.

DESCRIPTORS: *Maps, Geography, Hydrology, Geology, Agriculture, Economics, Mapping.

A book review.

Geography

SOVIET GEOGRAPHY: REVIEW AND TRANSLATION, VOL. 4, NO. 2. Feb 63, 60p. 35 refs.
Order from AGS $1.00, $6.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1962, no. 5, p. 43-94.
##Another trans. of p. 83-89 is available from OTS or SLA $3.60 in 63-13543, JPRS-16699, 17 Dec 62 [33]p.

DESCRIPTORS: *Geography, Soils, *Agriculture, Economics, Erosion, Fruits, Vegetables, Distribution, Desalination, Water supplies, Deserts, Glaciers, Melting, Scientific personnel.

Contents:
Reducing the dependence of Soviet agriculture on natural elements to a minimum, by I. P. Gerasimov
Quality appraisal of lands and a cadastre of land types, by D. L. Armand
Erosion-control needs and the intensification of agriculture, by S. I. Sil'vestrov
A natural transmission belt for the year-round supply of fresh farm products, by F. F. Davitaya
Desalting of water by natural freezing for farm use, by S. Yu. Geller
Local water supplies in the desert and agricultural development, by V. N. Kunin
##Artificial intensification of the melting of mountain glaciers to increase the stream flow in Central Asia, by G. A. Avsyuk
The work of geographers on regionalization of the USSR in the interests of agriculture, by N. A. Gvozdetskii
News notes
Current literature.

SOVIET GEOGRAPHY: REVIEW AND TRANSLATION, VOL. 4, NO. 3. Mar 63, 56p. 24 refs.
Order from AGS $1.00, $6.00/year

Trans. of Vsesoyuznoe Geograficheskoe Obshchestvo. Izvestiya (USSR) 1962 [v. 94] no. 1, p. 51-55; no. 6, p. 465-473; Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1961, no. 6, p. 117-125; 1962, no. 2, p. 18-25; Moscow U. Vestnik. Seriya [5]: Geografiya (USSR) 1962 [v. 17] no. 5, p. 12-17; no. 6, p. 83-84.

DESCRIPTORS: *Geography, Iron industry, Steel industry, Economics, Scientific personnel, Mathematical analysis, *Agriculture, Reports, Scientific research, Collaboration.

Contents:
Regionalization of the United States iron and steel industry, by V. I. Bulavin
New trends in bourgeois science on the location of production, by A. M. Neifakh
Soviet geographers at the 19th International Geographical Congress, by Yu. G. Saushkin
An economic-mathematical model of the location of farm production by regions of the Soviet Union, by V. S. Mikheeva
Some trends in changes of the structure and location of United States agriculture, by V. P. Kovalevskii
Scientific results of the trip of the delegation of Soviet geographers to the United States, by I. P. Gerasimov
Current literature.

SOVIET GEOGRAPHY: REVIEW AND TRANSLATIONS, VOL. 4, NO. 5. May 63, 52p. 9 refs.
Order from AGS $1.00, $6.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1962, no. 5, p. 95-101; Geografiya v Shkole (USSR) 1962, no. 1, p. 10-18; no. 6, p. 17-20; 1963, no. 1, p. 19-23; Vsesoyuznoe Geograficheskoe Obshchestva. Izvestiya (USSR) 1962 [v. 94] no. 5, p. 405-413; Moscow U. Vestnik. Seriya [5]: Geografiya (USSR) 1962 [v. 17] no. 3, p. 18-24.

DESCRIPTORS: *Geography, Transportation, Merchant vessels, Magnetic properties, Tidewater, Electric power production, Surveying, Swamps, Railroads, Economics, Agriculture.

Contents:
Marine transport as a national specialized activity of a major economic region, by M. B. Mazanova
The Kursk magnetic anomaly and its development, by E. I. Kapitonov
On the utilization of tidal power, by L. B. Bernshtein
Factors of swamp formation in the Polesies of the Russian Plain, by Yu. A. Shcherbakov
The use of landscape surveys in the planning of new railroads, by A. V. Chigarkin
The Virgin Lands Krai and its prospects of development, by A. A. Karsten
New notes
Current literature.

Geology

Bogachev, B. A.
DETERMINATION OF THE PHYSICAL PARAMETERS OF A GAS-BEARING RESERVOIR. [1963] 5p.
Order from ATS $6.50 ATS-01Q68R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 10, p. 47-51.

DESCRIPTORS: *Natural gas, Hydraulic accumulators, Pneumatic devices, Determination.

Chang, T. and Skaryatin, V. D.
RESULTS OF A STUDY OF FRACTURING OF CARBONATE ROCKS IN DAGESTAN USING AERIAL PHOTOGRAPHS. [1963] 9p.
Order from ATS $9.50 ATS-89Q69R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Geol[ogiya] i Razvedka (USSR) 1962, v. 5, no. 10, p. 53-62.

DESCRIPTORS: *Rock (Geology), *Carbonate minerals, *Non-metals, *Aerial photography, Mining engineering, Mechanical properties, Fracture (Mechanics).

Chirkova-Zalesskaya, E. F.
PROBLEMS OF BIOSTRATIGRAPHY OF CONTINENTAL DEPOSITS: ON THE AGE OF THE RED TERRIGENOUS DEPOSITS OF THE DEVONIAN OF SIBERIA. 16 Dec 60 [11]p.
Order from OTS or SLA $1.60 61-15892

Trans. from mono. All-Union Paleontology Society, Session (no. 3) 24-29 Jan 57. Transactions.

DESCRIPTORS: *Stratigraphy, *Paleoecology, Geology, *Siberia, Geologic age determination.

Junghans, Rudolf.
EARTH-STROKES AT POTASH MINING. [1963] 25p. (figs. omitted) 12 refs.
Order from SLA $2.60 63-16263

Trans. of Bergakademie (West Germany) 1953, no. 4, p. 121-130.

DESCRIPTORS: *Mining engineering, *Earth, *Mechanics, Deformation, Rupture, *Impact shock, *Potassium, *Salts, Geology.

In the main part of the article there are described numerous examples, especially from the Südharz mines, of earth-strokes, earth-impacts and shocks. These examples include especially the events of this kind which have been occurring with increasing frequency in recent years. The main strokes of Leopoldshall, Ludwig II, Krügershall and Kleinschierstedt are mentioned only briefly, since they are already comprehensively described in other places. Finally, it is attempted to enumerate the difficulties which the miner encounters at the counteracting of the earth-stroke danger at potash-mining. But the main task consists in overcoming the ignorance which still exists with respect to the thickness and structure of the main-anhydrite. This problem provides for the practice, but even more for the science, an extensive and promising field of activity. (Author)

Kedo, G. I.
SIGNIFICANCE OF THE SPORE-POLLEN ANALYSIS FOR THE STRATIGRAPHY OF THE CONTINENTAL DEPOSITS OF THE LOWER HORIZONS OF THE CARBONIFEROUS OF BELORUSSIA [O Stratigrafii i Sporovo-Pyl'tsevykh Kompleksakh Nizhnikh Gorizontov Karbona]. [1961] 20p.
Order from OTS or SLA $1.60 61-19561

Trans. from mono. All-[Union] Paleontology Society, Session (no. 3) 24-29 Jan 57. Transactions.

DESCRIPTORS: *Stratigraphy, *Paleoecology, Geology, Spores, Pollen.

Levchenko, D. G. and Nosov, V. M.
MEASURING INSTRUMENTS FOR TWO-FREQUENCY INDUCTIVE ELECTRO-PROSPECTING. 17 May 63, 12p. 5 refs. JPRS: 19265.
Order from OTS $0.50 63-21851

Trans. of Geologiya i Geofizika (USSR) 1963, no. 1, p. 134-136.

DESCRIPTORS: *Measuring devices (Electrical and Electronic), *Voltmeters, Design, Electromagnetic fields, *Geophysical prospecting, Semiconductors.

The process of differential measurements of electromagnetic field strength by simultaneous use of two frequencies increases considerably the stability of the operation of measuring instrument and ensures the effective compensation of the normal field. The incorporation of semiconductors in the design of field instruments for two frequency inductive method of electro-prospecting increases the operating potentialities of the devices permitting in the same time to keep their sensitivity and selectivity within necessary standards. The use of the tuned receiving loop antennas with ferrite rods increases the sensitivity of the instrument and protects it from undesirable interferences. (Author)

Pavlinov, V. N., ed.
WORKS OF THE CONFERENCE ON NEOTECTONICS IN CHINA (NO. 1) [PEKING, JAN 56]. 24 June 63, 269p. JPRS: 19815.
Order from OTS $4.00 63-31099

Trans. of mono. Trudy Pervogo Soveshchaniya po Neotektonike Kitaya, Moscow, 1960, 185p.

DESCRIPTORS: *Structural geology, *Deformation, *Conferences, *China, *Earthquakes, Seismic waves, Faults (Geology), Folds (Geology), Geology, *Geophysics.

Contents:
Foreword
From the editor
A word of introduction, by Li Shan-pang
The method for studying neotectonic movements and their relationship to seismicity, by G. P. Gorshkov
portions of Yunnan Province, by Meng Hsien-min
Certain data on the neotectonic movements in the western portion of Ssuch'uan Province, by Ch'eng Yu-ch'i
Certain data on the neotectonic movements in Tibet, by Li P'u
The relationship between the earthquake zones and the geological structures in southern China, by T'ien Ch'i-tsuan
Experience in neotectonic and seismic zoning in China (separating neotectonic and seismic zones), by Wang Chu-ts'uan
Certain data on the neotectonics of the eastern portion of Kansu Province, by Wang Nai-liang
Neotectonic movements appearing in the Sanmen Suite, by Liu Tung-shen and others
Some data on neotectonics in the region of Paot'ou, Hsian and Peking, by Ch'en Meng Hsung
Certain neotectonic phenomena in the Hanshui River Basin, by Shen Yu-ch'ang
Certain geological and geomorphological phenomena
Certain types of juvenile tectonic movements in China by Huang Chi-Ts'in
On certain manifestations of neotectonic movements in China, by V. N. Pavlinov
On neotectonic movements on the territory of China according to the data of geomorphology, hydrography and sedimentation, by Feng Ching-lan
Questions of neotectonics in the northern foothills of the Ch'inling, by Yang Chung-chien
The X-shaped fault systems in China and their relationship to the neotectonic movements, by Chang Wen-yu
Neotectonic movements in the Wu'taishan and Chungt'iaoshan Mountains, by Ma Hsin-yuan
Recent tectonic movements and their applied significance, by Li Liang-tse
Certain data on neotectonic movements in China, by Wang Yueh-lun
Certain ideas on the particular features of young tectonic movements in the Kansu Corridor, by Yu Po-liang
Quaternary movements in the northeast and southeast
in the Huanghe River Basin and their relationship with seismicity, by Hsu Yu-chien
Concluding speech, by G. P. Gorshkov.
Neotectonic movements in the region to the north of the Ch'inling Mountains, by Yuan Fu-li

Rakhmanova, S. G.
PALEONTOLOGIC CHARACTERIZATION OF THE KHOVANSHCHINA BEDS IN SEVERAL SECTIONS ON THE RUSSIAN PLATFORM. [1963] 7p.
Order from ATS $10.75 ATS-49Q69R

Trans. of Vses[oyuznyi] Neftegaz[ovyi] Nauchn[o]-Issled[ovatel'skii] Inst[itut]. Tr[udy] 1956, v. 9, p. 62-67.

DESCRIPTORS: *Paleoecology, Geochemistry, Geophysics, Petrology, Scientific research, Exploration, *Paleontology.

Rozova, A. V.
UPPER CAMBRIAN SALAIRAIAN TRILOBITES (TOLSTOCHIKHIN SUITE) (Verkhnekembriiskie Trilobity Salaira (Tolstochikhinskaya Svita)) tr. by Ivan Mittin. 1961 [35]p. 108 refs. Geological Survey no. 96.
Order from OTS or SLA $3.60 62-32145

Trans. of Akad[emiya] Nauk SSSR. Institut Geologii i Geofiziki, Novosibirsk. Trudy, 1960, no. 5, p. 80-96.

DESCRIPTORS: *Paleoecology, *Arthropods, Limestone, Geology.

Senkevich, M. A.
PROBLEMS OF BIOSTRATIGRAPHY OF CONTINENTAL SEQUENCES: PALAEOFLORISTIC BASIS FOR THE STRATIGRAPHY OF THE CONTINENTAL FACIES OF THE DEVONIAN DEPOSITS OF KAZAKHSTAN. [1961] 19p.
Order from OTS or SLA $1.60 61-19559

Trans. from mono. All-Union Paleontology Society, Session (no. 3) 24-29 Jan 57. Transactions.

DESCRIPTORS: *Stratigraphy, *Paleoecology, Geology, Plants (Botany).

Vendel'shtein, B. Yu.
RELATION BETWEEN THE PARAMETERS OF THE ELECTRICAL DOUBLE LAYER ON THE SURFACE OF ROCK PARTICLES AND THE DIFFUSION-ADSORPTION E.M.F. [1963] 10p.
Order from ATS $13.65 ATS-24Q69R

Trans. of Inst[itut] Neft[ekhimicheskoi i Gazovoi Promyshlennosti]. Tr[udy] (USSR) 1958, v. 22, p. 115-125.

DESCRIPTORS: *Electrical double layer, Surfaces, Rock (Geology), Particles, Diffusion, Adsorption.

Vendel'shtein, B. Yu.
SOME CHARACTERISTIC OF THE DIFFUSION-ADSORPTION POTENTIALS OF ROCKS. [1963] 14p.
Order from ATS $16.85 ATS-23Q69R

Trans. of Inst[itut] Neftekhim[icheskoi] i Gaz[ovoi] Prom[yshlennosti]. Tr[udy] (USSR) 1959, v. 25, p. 268-284.

DESCRIPTORS: *Rock (Geology), Diffusion, Adsorption.

Yarosh, A. Ya.
ESTIMATING THE EFFECTIVE DEPTH OF GRAVIMETRIC EXPLORATION FOR ORE DEPOSITS. [1963] 7p.
Order from ATS $10.50 ATS-98Q68R

Trans. of Razvedka i Okhrana Nedr (USSR) 1962, v. 28, no. 5, p. 36-42.

DESCRIPTORS: *Geophysical prospecting, *Gravimeters, *Ores, Deposits, Depth finding, Exploration, *Economic geology.

Yasenev, B. P.
NEW DATA ON DIRECT GEOCHEMICAL METHODS OF EXPLORATION FOR OIL AND GAS FIELDS. [1963] 7p.
Order from ATS $11.50 ATS-42Q68R

Trans. of #Geol[ogiya] Nefti i Gaza (USSR) 1962, v. 6, no. 12, p. 54-58.

DESCRIPTORS: Geochemistry, Mining engineering, *Oils, Petroleum, *Natural gas, Exploration, *Geophysical prospecting.

Gruder, Calia, Calusaru, A. and Raducanu, C.
DIATOMITE AND KAOLIN. Pt. 1 [of] Improvement of Some Natural Materials in the Electrochemical Way. [1963] 16p. (figs. omitted).
Order from SLA $1.60 63-16140

Trans. of Revista de Chimie (Rumania) 1958 [v. 9] no. 7/8, p. 361-366.

DESCRIPTORS: *Clays, *Clay minerals, *Kieselguhr, Electrochemistry, Iron compounds, Impurities, Reduction (Chemistry), Colors, *Purification, Chlorination, Sand.

The purpose of the present paper is to present an electrochemical process for the improvement of diatomaceous earths and kaolins.

Makarov, E. S., Lipova, I. M. and others.
TEXTURE CRISTALLINE DES URANINITES ET DES PECHBLENDES (Kristallicheskoe Stroenie Uraninitov i Nasturanov) [Crystalline Structure of Uraninites and Pitchblends] tr. by de Trezvinsky. 29 Sep 62 [58]p. (foreign text included) 17 refs. CEA Trans. no. R 1663.
Order from OTS or SLA $5.60 63-15479

Trans. in French of #Geokhimiya (USSR) 1960, no. 3, p. 193-213.

DESCRIPTORS: *Minerals, Ores, *Uranium compounds, Oxides, *Crystal structure, Lattices.

For minerals of uraninites-pitchblende series mineragraphic investigation has been carried out: the chemical composition, density and lattice constants have been determined; numbers of atoms and formula units in the unit cell have been calculated; the crystal structure has been determined anew by the neutron diffraction method and the manner of alteration of the structure owing to the degree of oxidation has been found out. Uraninites and pitchblendes have been established to have a primitive cubic lattice related to space group Th^6-Pa3 in contrast to a face-centered lattice of fluorite type-assumed earlier. For all the studied specimens the number of atoms in the unit cell is lower than 12. This value is in line with fluorite type of the structure. Atom coordinates for the $UO_{2.33}$ pitchblende including 3.15 formula units in the unit cell are listed on page 207. According to the new structure the U^{6+} atoms in uraninites and pitchblendes form UO_2^{2+} uranyl groups and the uranium-oxygen distance is 1.90 A. Excess oxygen atoms occupy the interstices of the lattice 4 (a) and 4 (b) to compensate the charge of the uranyl groups. The amount of these atoms is equal to the number of the U^{6+} atoms. With the increase of the oxidation degree of uraninites and pitchblendes the numbers of uranyl groups and excess oxygen atoms in the structure are increasing while the number of atoms (N) and corresponded formula units (Z) in the cell are decreasing. (Author)

Kreps, E. M.
PROBLÈME DE LA CONTAMINATION RADIOACTIVE DES OCÉANS ET DES ORGANISMES MARINS [Radioactive Contamination of Oceans and Marine Organisms] tr. by A. Giuliani. 19 Apr 61 [34]p. 20 refs. CEA Trans. no. R 1612.
Order from OTS or SLA $3.60 63-15493

Trans. in French of Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Biol[ogicheskaya] 1959 [v. 24] no. 3, p. 321-334.

DESCRIPTORS: *Oceans, *Aquatic animals, *Radiological contamination, Marine biology, Sea water, Radiation effects.

Krokhin, E. M.
THE FORMATION OF THE THERMOCLINE IN LAKES (Vozniknovenie Sloya Temperaturnogo Skachka v Ozerakh) tr. by R. E. Foerster. Nov 62 [8]p. 19 refs FRBC Trans. Series no. 365.
Order from NRCC NRCC C-4220

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1960, no. 6, p. 90-97.

DESCRIPTORS: *Lakes, *Temperature, Distribution, Density, Marine biology, Physical properties, Chemical properties.

The attempt at a quantitative definition of a thermocline in terms of a fixed gradient common to all lakes has proved fruitless. The next objective of future investigators of the thermocline must be the establishment of a relation between depth of the thermocline layer and the magnitude of the vertical gradients of temperature and density. This relationship must be investigated in seasonal profile in lakes of differing morphometries. It can be assumed that in the sea the process of thermocline development will be complicated by currents and also by the fact that the density of the ocean waters is determined not only by temperature, but also by salinity. (Author)

Devyatova, V. A.
HIGH-ALTITUDE ATMOSPHERIC SOUNDING WITH THE IL-28 AIRCRAFT (Vysotnoe Zondirovanie Atmosfery na Samolete Il-28). 1 May 63 [14]p. AID rept. T-63-54.
Order from OTS or SLA $1.60 63-19281

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1962, no. 43, p. 47-56.

DESCRIPTORS: Upper atmosphere, *Atmospheric sounding, Aircraft, Meteorological instruments, Atmosphere.

This article describes a new type of aircraft sounding of the atmosphere, including the equipment for a high-level sounding aircraft, the Il-28, its flight regime, observations in flight, and the peculiarities of processing the tape record of the K4-51 optical automatic recorder. (Author)

Shur, G. N.
EXPERIMENTAL INVESTIGATIONS OF THE ENERGY SPECTRUM OF ATMOSPHERIC TURBULENCE (Eksperimental'nye Issledovaniya Energeticheskogo Spektra Atmosfernoi Turbulentnosti). 2 May 63 [15]p. 7 refs. AID rept. T-63-55.
Order from OTS or SLA $1.60 63-19282

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1962, no. 43, p. 79-90.

DESCRIPTORS: Atmosphere, *Atmospheric motion, *Energy, Kinetic theory, Experimental data, Atmospheric sounding.

Analysis of the experimentally obtained energy spectra has shown that in future investigations major changes must be made in the method of measurements. If a very high percentage of the observational data is to be usable, the flights should be made in the turbulent zone with locked control surfaces so that the pilot's actions will not influence the results. In addition, for proper processing of the data, the measurement of pulsations characterizing the turbulence itself must be accompanied by highly accurate instrumental measurements of the fields of the principal meteorological elements, with special attention being given to obtaining vertical temperature and wind profiles in the zones under investigation. The experimental data show that conclusions drawn from the theory of locally isotropic turbulence are also valid for a thermally nonhomogeneous atmosphere with scales of turbulent formation up to 600-1000 m. Deviations from the 2/3 law at larger scales require additional experimental study and a more rigorous theoretical basis. (Author)

ENGINEERING

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 197 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
5 June 63, 30p. JPRS: 19579.
Order from OTS $1.00 63-21994

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia, East Germany, Poland, and Rumania.

DESCRIPTORS: *Abstracts, *Bibliographies, *Electronics, *Engineering, Space flight, Automation, Computers, Control systems, Electronic equipment, Semiconductor devices, Communication systems, Measuring devices (Electrical and Electronic), Mechanics, Industrial production.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 223(ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES.
28 June 63, 6p. JPRS: 19924.
Order from OTS $0.50 63-31149

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, *Czechoslovakia, *Yugoslavia, Automation, Control, Circuits, Damping, Cybernetics, Valves, Computers, Conferences, Inventions, Patents, Economics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 232(ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
3 July 63, 7p. JPRS: 20010.
Order from OTS $0.50 63-31197

Abstract trans. of Slaboproudy Obzor (Czechoslovakia) 1963, v. 24, no. 5, p. 253-311, 313.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, Research program administration, Piezoelectric crystals, Oscillators, Vector analysis, Color television, Amplifiers, Diodes, Magnetic materials, Electric power production, Communication, theory, Integrators (Computers). Electric cables, *Czechoslovakia.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 241 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
10 July 63, 8p. JPRS: 20111.
Order from OTS $0.50 63-31252

Consists of abstracts of articles from selected scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, *Poland, Fluid flow, Difference equations, Probability, Structural shells, Differential equations, Ferrites, Earth, Deformation, Metals, Oxides, Switching circuits, Speed regulators, Waveguides, Reflex klystrons, Magnetic recording systems, Attenuators, Attenuation.

ENGINEERING JOURNAL, 1963, VOL. 3, NO. 1.
24 June 63, 332p. JPRS: 19812.
Order from OTS $5.00 63-31098

Trans. of Inzhenernyi Zhurnal (USSR) 1963, v. 3, no. 1, p. 1-196.

DESCRIPTORS: *Aerodynamics, Aircraft, Aerodynamic configurations, Gas flow, Adiabatic gas flow, Hypersonic flow, Propeller blades, Supersonic flow, Wind tunnels, Fluid mechanics, Petroleum, Axially symmetric flow, *Mechanics, *Loading (Mechanics), *Elasticity, *Plasticity, Structural shells, Deformation, Presses (Machinery) Propagation, Rods, Friction, Motion, Stability, Gyroscopes, Surfaces, Bearings, Lubricants, Heat transfer, *Dynamics, Dies, Creep, Harmonic analysis, Membranes, Rings, Sandwich panels, Stresses, Equations, Mathematical analysis.

Contents:
Controlled motions in the plane of symmetry of winged vehicles of various configurations, by G. V. Aleksandrov and V. K. Svyatodukh
Hypersonic gas flow past thin bodies with radiation, by E. A. Romishevskii
On the problem of adiabatic two-dimensional gas expansion at arbitrary initial conditions, by A. S. Fonarev
Slip effects in hypersonic slightly rarefied flow about bodies, by V. S. Galkin
Flow about propeller blades with flow separation, by V. V. Keldysh
Integration of the equations for plane isentropic motion of a gas at high supersonic speeds, by A. I. Derzhavina and T. I. Chukanova
Transient processes in the increase and relief of the pressure in the stilling chamber of a wind tunnel with preheater, by A. L. Iskra
Interference of wells with elastic conditions of liquid filtration for given bottom pressures, by V. Yu. Kim
Self-similar solution of the equation for the axisymmetric non-steady filtration of a two-phase liquid, by Ch'eng Chung-hsiang
Bending of a circular chordwise-supported plate, by I. I. Faerberg
Certain forms of the general solution of the boundary problems in elasticity theory, by S. D. Volkov and M. L. Komissarova
The problem of a spherical shell with an unreinforced hole, by L. B. Imenitov
Analysis of non-linear problems of shell stability using a statistical method, by B. P. Makarov
Bending of an elastically supported circular orthotropic plate, by V. S. Kol'tsov
Deformation of tooling during the yielding of a thin layer of a plastic material, by I. A. Kiyko
The propagation of waves in an elastic bar with couloumb friction, by L. V. Nikitin
On the stability of the motion of a top with a gyroscope on an absolutely rough horizontal surface, by A. P. Duvakin
On chaplygin's approximate method, by L. N. Sretenskii

On the equations of physical aerodynamics, by V. N. Zhigulev
Invariant transformations of the equations of motion of a perfect gas for special cases, by A. A. Nikol'skii
On the similarity of the temperature fields in an infinitely long cylinder with steady removal of mass from the base, by V. Ya. Borovoi
Thermal phenomena in the lubricating layer of a thrust bearing in the initial starting period, by M. E. Podol'skii
The solution of certain problems of steady-state heat conduction on electric analogs using shape factors, by M. M. Litvinov
The application of the semi-inverse method for the study of symmetric flows in channels, by St. I. Georgitse
The problem of the pressure distribution in a layer with non-linear elastic filtration, by D. B. Ibragimov and A. B. Tovbis
Stress and velocity fields during the penetration of a die into a plastic material, by V. V. Sokolovskii
The problem of obtaining an integral solution to the non-linear problem of heat conduction for a semi-infinite body, by K. K. Vasilevskii
The integration of harmonic and bi-harmonic equations in curvilinear coordinates, by V. V. Abel
Large deflections of a circular orthotropic membrane, by I. S. Mamedov
The deformation of a circular ring under the action of equal concentrated torsional couples, by B. A. Berkman and K. A. Kitover
The stability of a simply supported sandwich plate during bending in two directions, by V. P. Karnozhitskii
On the theory of the strength of plane-strained bodies, by M. A. Lipson
Comment on the paper of S. V. Fal'kovich, "On the theory of quasi-linear equations," by V. O. Geogdzhaev

MULTIPLE GROOVE ARRANGEMENT FOR ANGLE FRAME JOINTS, tr. by P. C, C. 6 Mar 63, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-19057

Trans. of Italian patent 466,456, cl. IV. by Ditta Vasco Vanelli di Gastone Vanelli, appl. 17 Apr 50, granted 31 Oct 51, printed May 52.

DESCRIPTORS: *Structural parts, *Joints, *Wood, Design.

Alekseev, A. M. Klyukin, I. I., and Sborovskii, A. K.
VIBRATION ABSORBERS FOR REDUCING VIBRATION OF SHIPS' PLATES. [1962] [7]p. 3 refs. [DSIR] NLL M 8910.
Order from OTS or SLA $1.10 63-15200

Trans. of Sudostroenie (USSR) 1961 [v. 27] no. 12, p. 4-8.

DESCRIPTORS: *Ship plates, *Vibration isolators, Vibration, Rubber, Absorption.

Fredlund, Ernst.
THE MEASURING RANGE OF KNUDSEN'S MANOMETER. [1963] [14]p. 13 refs.
Order from SLA $1.60 63-14688

Trans. of Annalen der Physik (Germany) 1932, ser. 5, v. 13, no. 7, p. 802-810.

DESCRIPTORS: *Vacuum apparatus, *Pressure gages, *Manometers, Gases, Pressure, Measurement.

Measurements with a Knudsen manometer of a new type have shown that it is possible to obtain a linear relation between the manometer deflection and the gas pressure, until the mean free path is only approximately 10-12 times greater than the plate distance. Depending on the type of gas, the manometer shows a deviation which is incompatible with the simple theory, although this deviation can be easily explained by means of the theory of the accommodation coefficient. (Author)

Fredlund, Ernst.
STUDY OF KNUDSEN'S MANOMETER. [1963] [34]p. 11 refs.
Order from SLA $3.60 63-14687

Trans. of Annalen der Physik (Germany) 1932, ser. 5, v. 14, no. 6, p. 617-643.

DESCRIPTORS: *Vacuum apparatus, *Pressure gages, *Manometers, Gases. Pressure, Measurement.

Lippmann, Friedrich.
APPARATUS FOR DIFFERENTIAL THERMAL ANALYSIS: MEASURING INSTRUMENTS. [1963] 5p.
Order from SLA $1.10 63-14164

Partial trans. (p. 570-571) of Keramische Zeitschrift (West Germany) 1959, v. 11, no. 11, p. [475-480, 524-528, 570-573].

DESCRIPTORS: *Calorimetry, *Laboratory equipment, Calorimeters, Recording devices, Automatic, *Photographic recording systems, Galvanometers, Kymography, Thermocouples.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
ENGINEERED PERFORMANCE STANDARDS. July 63, 2p. 29 refs. OTS Selective Bibliography SB-514.
Order from OTS $0.10 OTS SB-514

DESCRIPTORS: *Bibliographies, Handbooks, *Operations research, Engineers, Maintenance personnel, *Job analysis, *Standards.

Lists 29 engineered performance standards developed by U. S. Navy Bureau of Yards and Docks engineers for all crafts in public works maintenance. The standards (handbooks and formulas) are based on a detailed analysis of the work required in building maintenance, machine repair and related work in a variety of trades at Navy installations. Each step in a given job is laid out in detail; publications can thus be used for planning and estimating a wide range of jobs in maintenance, repair, or construction. (Author)

Urazaev, Z. F. and Shishmarev, V. Yu.
ON THE QUALITY OF FILLING FLOATING GYROSCOPIC INSTRUMENTS WITH A SPECIAL LIQUID. 28 Mar 63 [13]p. 1 ref. FTD-TT-63-148; AD-402 601.
Order from OTS or SLA $1.60 63-19317

Unedited rough draft trans. of Aviatsionnyi Tekhnologicheskii Institut, Moscow. Trudy (USSR) 1961, v. 52, p. 52-60.

DESCRIPTORS: *Gyroscopes, Flotation, Air, Bubbles, Liquids, Design.

Aeronautical Engineering

FOR AIRPLANES OF THE FUTURE. 11 Mar 63 [4]p. FTD-TT-62-1751.
Order from OTS or SLA $1.10 63-19432

Unedited rough draft trans. from Sovetskaya Latviya (USSR) 1962, 3 July.

DESCRIPTORS: *Airplanes, Commercial planes, *Civil aviation, Jet engines, *Turbofan engines, Ducted fans.

A popularized account concerning the development of ducted-fan turbojet engines for civil aviation.

Dobrolenskii, Yu. P.
ATMOSPHERIC TURBULENCE AS A SOURCE OF DISTURBANCES TO AUTOMATIC CONTROL SYSTEMS OF AIRCRAFT. [1963] [11]p. 6 refs. [DSIR] NLL M 8908.
Order from OTS or SLA $1.10 63-15198

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 5, p. 174-184.
An unedited rough draft trans. is available from OTS or SLA $2.60 as 62-15812, FTD-TT-61-368, 18 Jan 62 [22]p.

DESCRIPTORS: Automatic, *Control systems, *Automatic pilots, Aircraft, *Atmospheric motion, Velocity, Superaerodynamics, *Correlation techniques, Statistical functions.

For abstracts see Technical Translations 8: 47, 1962.

Drakin, I. I.
DETERMINING THE OPTIMUM GEOMETRIC PARAMETERS OF AVIATION CONSTRUCTIONS. 7 Feb 63 [13]p. 2 refs. FTD-TT-62-1717; AD-299 618.
Order from OTS or SLA $1.60 63-19430

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962 [v. 5] no. 1, p. 66-74.

DESCRIPTORS: *Aerodynamics, *Engineering, *Aircraft, Construction, Design, Geometry.

Topics include: Determining the optimum parameters in the general case; optimum specific load per wing at a given speed and flight altitude; and, optimum elongation of nose section of the fuselage.

Chemical Engineering

SOVIET REPORT ON UKRAINIAN CHEMICAL MACHINE-BUILDING. USSR Industrial Development Soviet Chemical Machine Building no. 24. 22 May 63, 22p. JPRS: 19337.
Order from OTS $0.75 63-21888

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 12[85] 23 Mar, p. 10-15.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, Chemical industry.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 80. 21 June 63 [9]p. JPRS: 19797.
Order from OTS $0.50 63-31093

Trans. of 19 selected short articles from 1963 issues of Bakinskii Rabochii, Ekonomicheskaya Gazeta, Kommunist Erevan, Komsol'skaya Pravda, Leninskoe Znamya, Pravda Ukrainy, Rabochaya Gazeta, Sovetskaya Belorussiya, Stroitel'naya Gazeta, and Trud (Moscow).

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Industrial plants, *Rubber, *Plastics, *Fibers (Synthetic), *Phosphorus, Petroleum industry, Gels, Fertilizers, Insecticides, Fungicides.

Contents:
New facilities, products, equipment in the rubber industry
Improved plastics production process; rise in capacity products
New equipment in chemical fiber industry buildings
Phosphorus and petrochemical plant facilities; sale of silica gel
Graduate work in fertilizers and insectofungicides.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 82. 26 June 63 [54]p. JPRS: 19863.
Order from OTS $1.50 63-31115

Trans. of Agitator (USSR) 1963, no. 4, p. 41-44; Promyshlennoe Stroitel'stvo (USSR) 1963 [v. 41] no. 2, p. 10-12; and 9 selected articles from 1963 issues of 3 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Rubber, *Wastes (Industrial), *Industrial plants, Construction, Gasoline, *Polymers, Fibers (Synthetic), Production, Machines, Maintenance, Lactams, Economics, Apatite, Nepheline, Potassium.

Contents:
Wasteful burning of rubber plant products, by

V. Alyamovskii and others
Lagging construction of the third stage of the Minnibaevskii natural gasoline plant, by L. Fakhreev and others
Polymers and production know-how, by B. Krentsel'
For greater production of chemical fibers, by O. Klimenko
Polymers and the machine age, by A. Selivanov and V. Bereznikov
High-speed installation of equipment in shops for the production of caprolactam, by L. P. Topkasov and M. V. Nefedov
Arsenal of polymer materials, by P. Nazarov and F. Mustafin
Economic problems of the chemization of the national economy, by N. Fedorenko
Construction of an apatite-nepheline concentration mill on the Kola peninsula
For more progressive planning of chemical enterprises, by D. Iolovich
Lagging construction of facilities at the potassium combine in Kalush, by B. Pereberin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 83. 26 June 63 [84]p.
JPRS: 19870.
Order from OTS $2.25 63-31122

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1963 [v. 21] no. 1, p. 65, 72-73; no. 2, p. 37-40; Finansy SSSR, 1963 [v. 24] no. 3, p. 70-72; and 22 selected articles from 1963 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Industrial plants, Construction, *Automation, *Tires, *Plastics, *Printing, Yeasts, *Polyethylene plastics, Alcohols, Benzenes, *Fibers (Synthetic), Shale, Economics, Fertilizers, Phosphates, Synthetic rubber, *Polymers, Production, *Petroleum industry.

Contents:
Voronezh plant produces heavy-duty tires
Chemical industry of Tul'skaya Oblast advances
Plastics replace metal type
Automation of Moscow yeast plant
News of the Moscow chemical industry
Automatic manufacture of polyethylene
A new unit for the manufacture of aromatic substances
Achievements of the Kedaynyai chemical combine, by K. Pilkauskas
News from the Omsk tire plant
Miracle fibers, by V. Androsov and A. Meos
Construction problems at the Dankov chemical plant
Construction of chemical plants in Kazakhstan, by Yu. Pod'yachev
The chemical industry of Azerbaydzhan
The large-scale chemical industry of Azerbaydzhan
Potential resources at the Kokhtla-Yarve shale processing combine, by P. Dmitriev
Achievements of the chemical industry of Kazakhstan
Plastics and their application
Groznyi chemical plant starts to produce polyethylene
Nizhnii Tagil plastics plant handicapped poor design, by A. Gruzdov, D. Anokhin, and S. Kogan
New superphosphate plant at Gomel'
News from the Soligorsk potassium combine
Problems of the Efremov synthetic rubber plant
Polymer production in the Soviet Union, by N. Fedorenko and others
The petroleum industry of the Middle Volga
Lisichansk chemical combine faces important tasks, by V. Gogin
Procrastination at the Sumi superphosphate plant, by L. Khmelev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 88. 3 July 63, 16p.
JPRS: 20008.
Order from OTS $0.50 63-31195

Trans. from Stroitel'naya Gazeta (USSR) 1963, 17 Apr, p. 2-3; 19 Apr, p. 2; Rabochaya Gazeta (USSR) 1963, 11 Apr, p. 1; 14 Apr; 7 May.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Industrial plants, Construction, Tires, Cellulose, Paper.

Contents:
Rapid development of the chemical industry in the Ukrainian SSR, by V. Terent'ev
A new building for the Dnepropetrovsk tire plant
Proposed first stage of the Kotlas cellulose-paper combine
New chemical production facilities at Nizhnii Tagil and Sverdlovsk
Construction of the Chimkent tire-recapping plant, by V. Evdokimov
Chemical construction in the Ukraine
Shortcomings at important construction sites in Berezniki, by A. Dekker and others.

Bergheimer, Hamprecht and others.
MEETING ON 5 MAR 43 AT HÖCHST IN REGARD TO SODIUM. [1963] [1]p.
Order from OTS or SLA $1.10 63-14818

Trans. from mono. (report) of I. G. Farbenindustrie, A.G., Frankfurt a.M. n.d. (PB-73504).

DESCRIPTORS: *Sodium alloys, Lead alloys, Electrolysis, Sodium compounds, Ethyl radicals, Lead compounds, Chlorine, Synthesis (Chemistry), *Sodium, Mercury alloys.

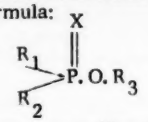
A discussion on the operating process at Heydebreck for the preparation of a sodium-lead alloy and on the Gersthofen sodium process.

Brandli-Schafroth, Bertha.
PEST CONTROL AGENT, tr. by J. R-P. 1 Apr 63, 6p.
Order from OTS or SLA $1.10 63-19267

Trans. of Austrian patent 167, 432, cl. 45g, appl. filed 18 Aug 48, pat. from 15 June 50, pub. 10 Jan 51 (priority claimed: Switzerland, 12 Oct 46).

DESCRIPTORS: *Pest control, Pesticides, *Oils, *Phosphoric acids, Esters, Nitro radicals, *Phenoxy radicals, Ethyl radicals.

The invention involves a pest control agent characterized in that it contains as the active substance compounds of the general formula:



wherein X represents oxygen or sulfur, R_1 and R_2 are identical or different radicals of aliphatic alcohols or secondary aliphatic amines, and R_3 is a negative substituted phenyl group or alkyl group. (Author)

Dvorak, J., Muller, J., and Zlamal, Z.
A METHOD OF PREPARATION OF HIGH-MOLECULAR-WEIGHT POLYACETALDEHYDE. [1963] 2p.
Order from ATS $4.50 ATS-48Q68C

Trans. of Czechoslovakian patent 100,322, opened for public inspection 15 Jan 61, issued 15 July 61.

DESCRIPTORS: *Acetaldehydes, *Polymers, Molecular weight, Preparation.

Golovintsov, A. G., Stolper, M. B., and Arkharov, A. M.
THE PRODUCTION OF LIQUID OXYGEN USING AN AVERAGE-PRESSURE SYSTEM WITH NITROGEN CIRCULATION. 19 Mar 63 [13]p. FTD-TT-63-113
Order from OTS or SLA $1.60 63-19254

Unedited rough draft trans. of Khimicheskoe Mashinostroenie (USSR) 1962 [v. 4] no. 5, p. 17-20.

DESCRIPTORS: *Liquefied gases, *Oxygen, Production, Separation, Cooling, Pressure, *Nitrogen, *Towers (Chemistry), *Compressors.

A report on research conducted on cycles of deep cooling with nitrogen circulation and with the use of turbomachines. These cycles make possible complete separation of treated air in a single-column device without contamination of the oxygen by oil, do not demand special removal of carbon-dioxide and drying of the treated air, and have good economic indexes. (Author)

Huber, Hans.
CALCULATIVE CONSIDERATIONS ON THE ECONOMY OF THE ALUMINUM PHOSPHATE CHEMISTRY. [1963] 25p. 20 refs.
Order from SLA $2.60 63-16245

Trans. of Chemiker-Z[ei]t[un]g (West Germany) 1962, v. 86, no. 8, p. 263-270.

DESCRIPTORS: *Phosphates, *Aluminum compounds, *Economics, *Phosphoric acid, Industrial production, Chemical industry, *Fertilizers.

Kazaryan, P. E.
PROCESS FOR THE PRODUCTION OF CALCIUM CYANAMIDE. [1963] 2p.
Order from ATS $2.00 ATS-71Q69R

Trans. of Soviet patent 149,764, filed 17 Aug 61, under 741,913/23-5 (announced in Byulleten' Izobretenii (USSR) 1962, no. 17).

DESCRIPTORS: *Calcium compounds, *Cyanamides, Production, Synthesis (Chemistry).

Knaack, D. F.
RECOVERY OF AROMATIC HYDROCARBONS. [1963] 8p.
Order from ATS $13.50 ATS-97Q68F

Trans. of Belgian patent 609,540, by E. I. Du Pont de Nemours & Co., priority based on pat. appl. filed in U. S. A., 27 Oct 60, under 65,298.

DESCRIPTORS: *Hydrocarbons, Recovery.

Kokurin, A. D. and Obrezkov, V. D.
THE EFFECT OF ELEMENTAL COMPOSITION OF STARTING MATERIAL ON SOOT FORMATION IN THE PROCESS OF ELECTROCRACKING IN MICRO-ARCS. [1963] 5p.
Order from ATS $7.50 ATS-16Q67R

Trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1962, v. 35, no. 11, p. 2574-2577.

DESCRIPTORS: *Electrochemistry, Decomposition, *Electric arcs, Particles, Materials.

Richter, Jose.
THE PREPARATION OF DDT BY THE CONTINUOUS PROCESS. [1963] 5p.
Order from SLA $1.10 63-10986

Trans. of Industria y Quimica (Argentina) 1945, v. 7, p. 132-135.

DESCRIPTORS: *DDT, *Insecticides, Pest control, Chlorides, Benzenes, Ethanols, Production, Synthesis (Chemistry), Towers (Chemistry).

Schäfer, Harald.
METHOD OF SEPARATING THE ELEMENTS NIOBIUM AND TANTALUM, AND FOUNDATIONS THEREOF. Rept. 19 on Niobium and Tantalum. [1963] 27p. (figs. tables omitted) 134 refs.
Order from SLA $2.60 63-14204

Trans. of Angewandte Chemie (West Germany) 1959, v. 71, no. 4, p. 153-160.

DESCRIPTORS: *Niobium, *Tantalum, Separation, Oxidation, Hydrolysis, *Distillation, Chromatographic analysis, Chlorides, Reduction (Chemistry), Acids, Crystallization, Oxalates.

The methods of niobium-tantalum separation are arranged and discussed from a unified point of view. By far the majority and the best of the known methods are based on the difference in stability of lower oxidation steps or middle hydrolysis steps. (Author)

Selivanov, L. M.
EQUATION FOR CALCULATING THE NUMBER OF ACTUAL PLATES IN A FRACTIONATING COLUMN ON COMPUTERS. [1963] 8p.
Order from ATS $8.50 ATS-24Q67R

Trans. of Akad[emiya] Nauk SSSR, Otd[elenie] Tekhn[icheskikh] Nauk. Izv[estiya]: Met[allurgiya] i Toplivo, 1962, no. 5, p. 227-232.

DESCRIPTORS: *Towers (Chemistry), *Computers, *Fractography, Equations, Sheets.

Yakubovich, A. Y., Zaitsev, E. L. and others.
SYNTHESIS OF 2, 4, 6, -TRIALKYL AND 2, 4, 6-TRIARYL-1, 3, 5-TRIAZINES FROM IMINO ESTERS (Sintez 2, 4, 6-Tryalkil i 2, 4, 6-Tryaril-1, 3, 5-Tryazinov iz Iminoefirov) tr. by Marcel I. Weinreich. 11 Oct 62 5p. 3 refs.
Order from OTS or SLA $1.10 SCL-T-442

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. [Zhurnal] (USSR) 1962, v. 7, no. 2, p. 229-230.

DESCRIPTORS: *Triazines, *Phenyl radicals, Alkyl radicals, Ethyl radicals, Propyl radicals, Butyl radicals, Benzyl radicals, Synthesis, *Imines, Esters.

Civil Engineering

FACILITIES FOR UNDERGROUND STORAGE UNDER PRESSURE AND THEIR METHOD OF CONSTRUCTION. [1963] 15p.
Order from ATS $20.75 ATS-07Q69F

Trans. of French patent 1,295,149, by Fenix & Scisson, Inc., U. S. A., filed 13 July 61, granted 24 Apr 62, filed in U. S. A. 15 July 60, under 43,100, in the names of Sidney E. Scisson and Gilbert J. Fenix.

DESCRIPTORS: *Underground structures, Shelters, *Storage, Construction, Pressure.

SAN-MEN GORGE WATER CONSERVANCY KEY ENGINEERING PROJECT: GENERAL OUTLINE. Nov 57 [11]p.
Order from OTS or SLA $1.60 62-23507

Partial trans. (excerpts) of Chung Kuo Shui Li (Chinese People's Republic) 1957, no. 3, p. 1-3, 5-6, 24-26.

DESCRIPTORS: *Water supplies, Rivers, *Dams, Construction, Civil engineering, China.

Bettzieche, P. and Hengstenberg, H.
A NEW METHOD FOR THE DETERMINATION OF REGIONS OF MAXIMUM TENSILE STRESS CONCENTRATION IN STRUCTURAL PARTS. Apr 63.
Order from BISI 3 5s BISI-3232

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 11] p. 775-781.

DESCRIPTORS: *Structural parts, Tensile properties, Elasticity, Microstructure, Determination, Loading (Mechanics)

Goldstein, M. N.
EQUIPPING AND MAINTAINING THE RAILROAD BED. [1963] [7]p.
Order from OTS or SLA $1.10 63-14003

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 11] p. 58-61.

DESCRIPTORS: *Railroad tracks, Foundations (Structures), *Civil engineering, Soil mechanics, Trafficability.

The contemporary designing method based on the so-called "allowable" pressure, does not allow to correctly estimate and utilize the actual mechanical properties of the basic surface. The magnitutes of the flexible deformation static and dynamic modulus, respectively, differ from each other by several hundred percent. Corresponding corrections should be introduced into the calculations, the using of a uniform modulus for flexible deformation, as it is practised now, should be abandoned. At present, the method of electrical analogies can be applied when calculating the increase rate of ballast depressions and when explaining the conditions of their tapering off, based on the hydro-dynamic theory, described above. Quality control of the soil-bed while in construction should be intensified. A switch should be made to the blow-sounding method of soil inspection. The method of limiting state should be applied when designing the track as a whole, and particularly the soil-bed. The dimensions of ballast layer should also be determined by the limiting state method, depending on the soil nature and its possible changes while in operation. (Author)

Kuzmichev, A. E.
INVESTIGATION OF THE LOAD-BEARING CAPACITY OF REINFORCED CONCRETE FRAMES AND PRECAST CONTINUOUS BEAMS. [1963] 18p.
Order from OTS or SLA $1.60 63-14711

Trans. of Beton i Zhelezobeton (USSR) 1957, no. 12, p. 486-491.

DESCRIPTORS: *Reinforced concrete, Loading (Mechanics), *Structural parts, Beams (Structural), Mechanical properties, Reinforcing materials, Load distribution, Joints, Tests.

It is shown that in precast statically indeterminate reinforced concrete structures stress redistribution due to inelastic deformations takes place in the same manner as in monolithic structures. Consequently, methods of taking into account the effect of stress redistribution on the load-bearing capacity of precast and monolithic structures are analogous. (Author)

Lazarevic, Dj.
SEGMENTAL SQUARES: LININGS OF PRESSURE TUNNELS IN ANISOTROPIC MOUNTAIN MASSIVES (Segmenti Kvadrati: Obloge Hidrotehnickih Tunela pod Pritiskom u Anizotropskim Brdskim Masivima) tr. by Konstantin Stankovic. 1963, 107p. 9 refs. PL 480 Int.
Order from OTS $1.00 60-21657

Trans. of Hidrotehnicki Institut "Inzenjer Jaroslav Cerni". Monografija (Yugoslavia) 1955, v. 2, 75p.

DESCRIPTORS: *Civil engineering, Hydraulic research, *Underground structures, Pressure, Water tunnels, Construction, Geophysics, Mountains, Anisotropy, Mechanical properties, Concrete, Load distribution.

Contents:
Mutual and complementary relation between experiment and analysis in the solving of a complex stress problem
The radial press
Calculation of pressure tunnel linings in anisotropic mountain massives
Tunnels under pressure in the form of segmental squares
Determination of stresses in pressure tunnel linings founded on D formations actually measured
Concrete for tunnel linings in the form of segmental squares

Mihrtadiantz, Maksoud.
BUILDING ELEMENT FOR CURVED WALLS, tr. by F. H. B. 4 Apr 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19270

Trans. of French patent 527, 832, gr. VII, cl. 1, appl. 2 Dec 20, granted 3 Aug 21, pub. 31 Oct 21.

DESCRIPTORS: Reinforced concrete, *Walls, *Structural parts, Curved profiles, Buildings, Design, Joints.

Mondozzi, Renzo.
MODULE FOR STRUCTURAL UNITS, tr. by J. R-P. 10 Apr 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19278

Trans. of Italian patent 470, 886, cl. XIII, appl. 21 Nov 50, granted 28 Apr 52, printed Oct 53,

DESCRIPTORS: *Structures, *Structural parts, Geometric forms, Design, Joints.

The object of the invention is an element which because of its special structure makes possible the production of structural units obtained by indirect as well as direct joining. Such an element comprises essentially a slab from which project suitably shaped blocks situated at such distances from one another that they afford a direct of indirect seating of corresponding blocks of another element in the remaining free space so that various elements that are either identical or similar, or that may be of even more simple structure, can be joined and interconnected in various ways. (Author)

Electrical and Electronic Engineering

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 71 (ELECTRICAL ENGINEERING AND MACHINE BUILDING TECHNOLOGY SERIES). 11 June 63, 2p. JPRS: 19636.
Order from OTS $0.50 63-31023

Trans. of selected abstracts from Referativnyi Zhurnal. Elektrotekhnika i Energetika (USSR) 1963, no. 1; Referativnyi Zhurnal. Tekhnologiya Mashinostroeniya (USSR) 1963, no. 3.

DESCRIPTORS: *Abstracts, *China, *Electrical engineering, *Power equipment, Mathematical analysis, Differential equations, Power, *Transmission lines, Ultrahigh frequency, Electric relays, *Pipes, Mechanical working, Electrical equipment.

ELECTRIC TECHNOLOGY U.S.S.R., 1960, VOL. 7, P. 333-484. Feb 61, lv.
Order from PP $14.00, $56.00/year

Trans. of Elektrichestvo (USSR) 1960, no. 7, p. 11-25, 61-65; no. 8, p. 36-39, 51-67; no. 9, p. 23-29, 38-45, 49-52. Abstracts are included of those papers which are not translated in full.

DESCRIPTORS: *Electrical engineering, *Electrical equipment, Electromagnetic drives, Rolling mills, Grinders, Computers, Current regulators, Capacitors, Nonlinear systems, Power transformers, Turbines, Electric motors.

Contents:
New electrical drives for continuous cold rolling mills, by F. F. Olefir
An automatic motor drive for grinding machines with follow-up feed, by A. A. Sirotin and V. A. Eliseev
An electronic computer study of an automatic helmsman, by I. R. Freidzon
The 500 kV substation at Sverdlovsk, by L. D. Gustov and others
An electrical current stabilizer, by V. S. Popov and others
Conditions for the symmetrical performance of a capacitor motor, by G. G. Rekus
Step motors, by B. A. Ivobotenko
Automatic electrical optimizers, by L. N. Fitsner
First fundamentals of an analytical theory for discontinuous functions in the design of non-linear electrical circuits, by L. L. Ivanov
Modelling the leakage losses of large power transformers, by N. V. Boriv
Full wave rectification with "zero" anodes and its use for exciting excitrons, by V. M. Kolesnikov
The impulse characteristics of turbine generators, by V. A. Lyul'ko.

ELECTRONICS: BROAD ROAD TO INDUSTRY. 22 Apr 63, 34p. JPRS: 18816.
Order from OTS $1.00 63-21626

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 9(82) 2 Mar, p. 7-12.
Another trans. is available from OTS $1.25 as 63-21560, JPRS-18654, 11 Apr 63 [40]p.

DESCRIPTORS: *Industrial production, *Precision equipment, Electronics, *Electronic equipment, Automation, Engineering, Economics, Materials, Machines, *Reliability (Electronics), *Computers, *Packaged circuits.

Contents:
At the "Business Club" of "Ekonomicheskaya Gazeta"
The tempo must be accelerated, by K. Martyushov
Toward greater labor productivity, by M. Rakovskii
Unity of science, engineering, economics, by G. Kazanskii
Expand scientific research
For the electronics industry - excellent materials
Modern equipment is necessary
Reliability and again reliability
Specialize the production of unit parts
Technology of the future
Electronic computers in industry
A few words from the notes and shorthand records, by V. Ivanov and V. Nazarov
Appendix A, B. C AND E.

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 4(277). 20 June 63, 148p. JPRS: 19771.
Order from OTS $3.00 63-31084

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 4(277) p. 1-34 including covers.

DESCRIPTORS: *Communication systems, Research program administration, Electronics, Television antennas, Amplifiers, Circuits, Economics, Management engineering, Telegraph systems, Personnel, Postal systems, Labor, Conveyors.

Contents:
Public supervision at communications enterprises, by A. F. Baklanov
To fulfill the fifth-year program of the Seven-Year Plan ahead of schedule (editorial)
Rebuilding of antenna systems of the television stations when introducing second television programs, by V. D. Kuznetsov and N. V. Soshnikova
Determination of some qualitative indices of amplifier devices by means of nonlinear-distortion meter, by G. Kh. Pan'kov
Electronic seconds pulser, by N. M. Abramov
Classification and brief characteristic of electric spark-quenching circuits, by N. P. Truskalov
The planning and economic work must be improved, by M. A. Shvechikov
High quality of work is the main object of telegraph-service workers, by A. G. Smiryagin
For the raising of production efficiency, by V. I. Korneev
Production efficiency at Vil'nyus central telegraph office, by A. A. Vaisa
On the road of reorganization, by A. M. Malakhiev
From the experience of converted low-frequency amplifiers of the SIP racks of the V-12, K-12 and K-24 equipment to transistors, by N. A. Semenova
The pace of mechanization of production processes at the post office must be accelerated, by B. A. Voronov
The movement of communication workers for Communist labor must be more widespread, by A. M. Kanaeva
They are serving people, by D. A. Egorov
Most important to inculcate Communist attitude toward labor, by L. Ya. Yakovlev
The honor of Soviet communication worker must be valued, by N. F. Gilev
One who is marching in front, by I. A. Yundin
An efficient communications branch office, by N. M. Gordeev
A shuttle-type conveyer, by A. N. Kokhanskii
New buildings of Ryazan' general post office and Tula mail transport department, by B. N. Nikolaev

POWER EXPRESS, 1963, VOL. 2, NO. 5. 1963, 40p.
Order from International Physical Index, Inc., 1909 Park Ave., New York, 35, N. Y. $57.50

Comprehensive digest of current Russian literature dealing with power topics.

DESCRIPTORS: Abstracts, *Power, *Heat transfer, Thermodynamics, Potassium, Power amplifiers, Electromagnetism, *Power equipment, *Automation, Computers, Electrical networks, *Machines, Generators, Electric motors, Gas turbines, *Transmission lines, Distribution, *Instrumentation, Voltage regulators, *Electric power production, Boilers, Steam turbine.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 51. 18 June 63 [17]p. 3 refs. JPRS: 19722.
Order from OTS $0.50 63-31064

Trans. of Vestnik Elektropromyshlennosti (USSR) 1963 [v. 34] no. 3, p. 1-3, 29, 50-51, 78.

DESCRIPTORS: *Industrial production, *Electrical equipment, Coal, Mining engineering, *Electric motors, Transformers, Electric switches, Silicon, *Rectifiers, Reliability, *Power transformers, Semiconductor devices.

Contents:
Series production of electrical equipment for the coal mining industry, by V. A. Khorunzhii and E. N. Zikeev
A new silicon rectifier
Means of increasing service reliability of electrical equipment, by V. N. Mkheidze and B. Z. Vainshtein
Power transformer for semiconductor rectifiers (photo caption).

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 52. 20 June 63 [15]p. JPRS: 19766.
Order from OTS $0.50 63-31081

Trans. of 10 selected articles from 1963 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Gas turbine rotors, *Rectifiers, Semiconductor devices, *Generators, *Power transformers, *Electrical motors, Industrial plants, *Electric insulation, Silicone plastics, Personnel management.

Contents:
Experimental rotor with water cooling for a turbogenerator
New rectifying installation for the chemical industry

Mass production of a new synchronous generator
New current transformer with a capacity of 5000,000 volts
Production of 38 new electrical machine designs
8,000 Kilowatt motor tested at Novosibirsk turbo-generator plant
New buildings and techniques at the Mogilev electrical motor plant
High-voltage TSMS-3 transformer
New metallurgical engines with silicone insulation
Management of the Kurgan-Tyube transformer plant scored for negligence.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 54. 26 June 63 [20]p. JPRS: 19862.
Order from OTS $0.50 63-31114

Trans. from Kommunist, Erevan (USSR) 1962, 12 Dec, p. 1; Sovetskaya Belorussiya (USSR) 1962, 12 Dec, p. 3; Sovetskaya Estoniya (USSR) 1962, 18 Dec, p. 2, 19 Dec, p. 2; Trud, Moscow (USSR) 1962, 12 Dec, p. 3.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Fluoresence, *Lighting equipment, *Electrical industry, Mercury, *Rectifiers, *Generators, *Electric motors.

Contents:
Manufacture of fluorescent tubes at Erevan electric bulb plant, by R. Meliksetyan
Needless discontinuation of production of fluorescent lamp starters at Grodno "Elektrosvet" plant, by V. Kushner
Progress at Tallin plant of mercury-arc rectifiers imeni M. I. Kalinin, by I. Vel'man
Comparative costs of generators manufactured by Elektrotyazhmash and Elektrosila plants, by P. Vayvantsev
Shortcomings in the introduction of new equipment at volta electric machine building plant, by N. Simonenko and M. Tsar'kov.

Aftalion, M. R.
INVESTIGATIONS INTO THE MECHANICAL STRENGTH OF HIGH-POWER TRANSFORMER WINDINGS SUBJECTED TO REPEATED SHORT-CIRCUITS. [1963] [24]p. (4 figs. [refs.] omitted).
Order from SLA $2.60 63-14988

Trans. of R[evue] G[énérale de l']É[lectricité] (France) 1960, v. 69, no. 1, p. 3-18.

DESCRIPTORS: *Power transformers, *Coils, Electric discharges, Electric wire, Clamps, Stresses, Tests.

An examination is made of the conditions which should be satisfied to enable a transformer to resist a number of repeated short-circuits, that is, three successive complete short-circuits on each leg of the equipment under test. The phenomena arising as the result of the electrodynamic forces occurring in the windings submitted to short-circuit is analyzed and an account is given of research carried out on a 20MVA 63 kV/16.5kV transformer. The results demonstrate the possibility of reaching a satisfactory conclusion based upon axial pre-stress of the windings so ensuring efficient clamping of the latter.

Akulinichev, I. T.
AMATEUR TELEVISION RECEIVER. 27 May 63, 48p. JPRS: 19409.
Order from OTS $1.25 63-21918

Trans. of mono. Lyubitel'skii Televizor, Moscow, 1962, 56p.

DESCRIPTORS: *Television receivers, Design, Construction, Instruction manuals.

A do-it-yourself manual.

Alekseev, S. V.
MULTICHANNEL TELEMETRY DEVICE. 14 Mar 63 [5]p. FTD-TT-63-95, AD-400 542
Order from OTS or SLA $1.10 63-19156

Unedited rough draft trans. of Soviet patent 148448 (69947/26), 28 Feb 61.

DESCRIPTORS: *Telemeter systems, Design.

The invention proposes a multichannel telemetry device with pulse-amplitude modulation of the transmitted pulse signals and with synchronized commutation channels at the receiving and transmitting stations containing a circuit for producing scaling signals at the transmitting station, and a circuit for producing standard signals at the receiving station has the distinguishing characteristic that with the aim of increasing the accuracy of measurements, a standard- and scaling-signal comparator which generates an error signal, a memory circuit for this signal, and an amplitude correction unit which when switched into the memory circuit corrects the pulse amplitudes carrying the useful information, have been used at the receiving station. (Author)

Dubinin, A. M., Eremin, V. I. and others.
NEW APPARATUS FOR MEASURING DEVICES FOR HIGH VOLTAGES. [1962] [7]p. 6 refs. [DSIR] NLL M 8914.
Order from OTS or SLA $1.10 63-15174

Trans. of Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 2, p. 44-49.

DESCRIPTORS: *Electric potential, *Measuring devices (Electrical and Electronic), Oscillographs, Voltmeters.

Förster, F. and Herold, V.
ON THE REACTIONS IN THE IRON-NICKEL SUPEROXIDE STORAGE BATTERIES. III. THE ACTION OF THE IRON ELECTRODE. [1963] [110]p. (figs. tables omitted) 53 refs.
Order from SLA $9.10 63-14405

Trans. of Zeitschrift für Elektrochemie (Germany) 1910, v. 16, no. 13, p. 461-498.

DESCRIPTORS: *Storage batteries, Iron, Electrodes, Nickel, Oxides, Electrochemistry, *Alkaline cells.

Forster, F.
THE PROCESS IN THE IRON-NICKEL SUPEROXIDE STORAGE BATTERY. II. THE ACTION OF THE ELECTROLYTE. [Die Vorgange im Eisennickel-Superoxydsammler. II. Das Verhalten des Electrolyten], [1963] 21p. (figs. tables formulae omitted) 26 refs.
Order from SLA $2.60 63-14434

Trans. of Zeitschrift für Elektrochemie (Germany) 1908, v. 14, no. 21, p. 285-292.
Another trans. is available from SLA as 57-00755, 13p.

DESCRIPTORS: *Storage batteries, Iron, Nickel, Oxides, *Electrolytes, *Alkaline cells, *Potassium compounds, *Hydroxides, Electrochemistry.

Förster, F.
PROCESSES IN IRON-NICKEL SUPEROXIDE STORAGE BATTERIES, PT. I. [1963] [53]p. (figs. omitted) 65 refs.
Order from SLA $5.60 63-14423

Trans. of Zeitschrift für Elektrochemie (Germany) 1907, v. 13, no. 28, p. 414-434.

DESCRIPTORS: *Storage batteries, *Electrodes, *Nickel compounds, *Oxides, Oxidation, Electrolysis, Hydroxides, Water, Oxygen, Hydrogen, Electrolytes, Anodes, Electric potential, Electric discharges, Capacitance, Chemical analysis, Iron compounds, *Alkaline cells, Electrochemistry.

Contents:
Introduction
On nickel superoxide electrodes
The composition of the product derived from the electrolytic oxidation of Ni $(OH)_2$
On the behaviour of the charged nickel superoxide electrode in the currentless state
On the action of the nickel superoxide electrodes during the charging and during the discharging.

Grube, G. and Doetsch, E.
THE ACTION OF THE CADMIUM ELECTRODE IN ALKALINE NICKEL-CADMIUM STORAGE BATTERIES. [Das Verhalten der Cadmiumelektrode im Alkalischen Nickel-Cadmium Akkumulator]. [1963] 30p. (figs. tables omitted) 12 refs.
Order from SLA $2.60 63-14424

Trans. of Zeitschrift für Elektrochemie (Germany) 1936, v. 42, no. 5, p. 247-258.

DESCRIPTORS: *Storage batteries, *Cadmium, Electrodes, Nickel, *Alkaline cells, Electrochemistry.

Kaplyanskii, A.E. and Petrov, P. I.
COMPENSATED COMMUTATING MECHANICAL RECTIFIERS. 12 Mar 63 [15]p. 4 refs. FTD-TT-63-34; AD-299 662.
Order from OTS or SLA $1.60 63-19433

Unedited rough draft trans. of Elektrichestvo (USSR) 1958, no. 3, p. 52-56.

DESCRIPTORS: *Rectifiers, Electric currents, Electric potential, Design, Operation, *Commutators, Model tests.

Kornyushkin, Yu. D.
PROBLEM OF EMPLOYING ELECTRONIC FEELERS TO MEASURE VIBRATION AMPLITUDES AND FREQUENCIES. 16 Apr 63 [15]p. 3 refs. FTD-TT-63-89.
Order from OTS or SLA $1.60 63-19464

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1962 [v. 5] no. 8, p. 909-918.

DESCRIPTORS: *Measuring devices (Electrical and Electronic), Vibrations, Frequency, *Electron tubes, Design.

A description of developed and tested electronic tubes with mechanically controlled electrodes, intended for measuring vibration amplitudes and frequencies. (Author)

Kozubovskii, S. F.
THE AUTOMATION OF CORRELATION MEASUREMENT OF ROLLING SPEED BY MEANS OF A DIFFERENTIAL CIRCUIT. [1962] [6]p. 3 refs. [DSIR] NLL M 8919.
Order from OTS or SLA $1.10 63-15168

Trans. of Avtomatyka (USSR) 1962 [v. 7] no. 1, p. 82-84.

DESCRIPTORS: *Differentiating circuits, Automation, Control systems, *Correlation techniques, Velocity, Rolling mills.

Linkovskii, G. B.
USE OF EXPERIMENTAL DATA IN CALCULATING THE RELIABILITY OF RADIOELECTRONIC EQUIPMENT BASED ON THE POISSON DISTRIBUTION. 18 Mar 63 [6]p. 6 refs. FTD-TT-63-38. AD-402 426.
Order from OTS or SLA $1.10 63-19478

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961 [v. 4] no. 5, p. 43-46.

DESCRIPTORS: *Reliability (Electronics), Electronic equipment, *Probability, Statistical analysis, Experimental data, Mathematical analysis, *Quality control, Radio equipment.

A discussion of the use of experimental data on the average time of faultless operation in calculating the reliability of the number of failures during Poisson distribution. (Author)

Lugovoi, V. S.
DIRECT CURRENT TRANSMISSION IN MOUNTAINOUS REGIONS. [1962] 2p. [DSIR] NLL M 8916.
Order from OTS or SLA $1.10 63-15170

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 10, p. 98-101.

DESCRIPTORS: *Direct current, *Transmission lines, *Mountains, Economics.

Minash, L. S.
A LOGARITHMICALLY-PERIODIC ANTENNA (Logarifmicheski-Periodicheskaya Antenna) tr. by H. H. 14 May 63, 2p. 1-2593.
Order from OTS $0.50 63-11641

Trans. of Soviet patent 147 236, cl. $21a^4$, 46_{05}, announced 13 Apr 61 as 726590/26-9, pub. 12 May 62 (pub. in Byulleten' Izobretenii (USSR) 1962, no. 10).

DESCRIPTORS: *Broadband antennas, Antennas, *Antenna configurations.

Moortgat-Pick, Waldemar.
LOW FREQUENCY TRANSISTOR AMPLIFIER THAT COMPENSATES FOR THE EFFECT OF TEMPERATURE FLUCTUATIONS ON THE OPERATING POINT OF THE OUTPUT STAGE, tr. by G. E. 7 Mar 63, 9p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.10 63-19060

Trans. of German Auslegeschrift (DAS) 1,027,728, cl. $21a^2$, 18/08, internat'l. cl. Ho3f, by Telefunken G.m.b.H., appl. 23 Aug 56, announced and pub. 10 Apr 58.

DESCRIPTORS: Low frequency, *Transistor amplifiers, Temperature, Oscillation, Electric potential, Amplifiers.

Rips, Ya. A.
ESTIMATE OF THE OPERATIONAL RELIABILITY OF ELECTROMAGNETIC MECHANISMS (Otsenka Nadezhnosti Srabatyvanya Elektromagnitnykh Mekhanizmov) tr. by Marcel I. Weinreich. 9 July 62, 15p. 4 refs.
Order from OTS or SLA $1.60 SCL-T-352

Trans. of Elektrichestvo (USSR) 1959, no. 8, p. 57-62.
Another trans. is available from RIS $15.00 as RIS 0-7 [1961] 14p.

DESCRIPTORS: *Electrical equipment, *Electromagnets, Relays, Operation, *Reliability, Determination, *Probability.

The article expounds a procedure enabling one to ascertain an estimate of the reliability of electromagnetic machinery by using the results of testing a comparatively small number of specimens. In particular, this evaluation can be found through the results of typical tests without performing any special experiments, so that there arises the possibility of standardizing the magnitude of reliability and its periodic control.

Schulz, H.
THE SIEMENS TELEWRITER (HELL-SCHREIBER) (Der Siemens-Hell-Schreiber). [1963] [16]p. (foreign text included).
Order from SLA $1.60 63-14438

Trans. of Telegraphen-, Fernsprech-funk- und Fernsprech-technik (Germany) 1941, v. 30, no. 2, p. 52-57.

DESCRIPTORS: *Teletype systems, Design, Operation.

Tishchenko, N. A.
PROBLEM OF DEPENDABILITY OF ELECTRIC MOTORS. 12 Mar 63 [23]p. FTD-TT-63-35.
Order from OTS or SLA $2.60 63-19482

Unedited rough draft trans. of Elektrichestvo (USSR) 1961, no. 11, p. 7-14.

DESCRIPTORS: *Electric motors, Reliability (Electronics), *Quality control, Economics, *Probability, Statistical analysis.

Topics include: Mathematical concept of the dependability of motors; outlays for repairs and maintenance of motors; basic causes of insufficient dependability of motors; and quality of manufacture and selection of motors.

Tishchenko, N. A.
PROBLEM OF RELIABILITY OF ELECTRIC MOTORS. 18 Mar 63 [12]p. FTD-TT-63-36. AD-402 441.
Order from OTS or SLA $1.60 63-19490

Unedited rough draft trans. of Elektrichestvo (USSR) 1961, no. 12, p. 16-19.

DESCRIPTORS: *Electric motors, *Reliability (Electronics), *Quality control, Economics.

Topics include: Studying the remunerativeness of motors; planning of motors with higher reliability; and, data on electromotor supply in the USSR.

Yantovskii, E. L. and Tolmach, I. M.
ON THE THEORY OF AN ASYNCHRONOUS MAGNETOHYDRODYNAMIC GENERATOR WITH A ROTATING FIELD. 4 Feb 63 [18]p. 2 refs. FTD-TT-62-1797.
Order from OTS or SLA $1.60 63-19180

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1962, no. 3, p. 32-41.

DESCRIPTORS: Theory, *Magnetohydrodynamics, *Generators, Magnetic fields, Rotation, Plasma physics, Energy conversion, Partial differential equations, Equations of motion, Equations of state.

A previous paper (Akad. Nauk SSSR. Otd. Tekh. Nauk. Izv. Energ. i Avtom. no. 6, p. 142-151, 1961; available in translation from OTS or SLA as 62-32803) presents equations which describe the flow of a conducting gas in a magnetohydrodynamic generator (MHDG) with a rotating field. In the present article these equations are generalized by taking into account the dependence of the conductivity of the gas on the temperature and density, by not averaging with respect to the transverse coordinate and time, and also by taking into account the voltage drop across the stator winding and the characteristics of the winding. A system of equations for an actual scheme of an asynchronous MHDG is obtained. The concept of vector diagrams of an a-c MHDG is introduced. The process of the direct conversion of a part of the kinetic energy of the gas to electrical energy and its entry into the network is illustrated with the aid of local and over-all vector diagrams. (Author)

Zinke, O.
BASIS FOR INSTALLATIONS OF BROADBAND ANTENNAS (Grundlagen der Breitbandantennenanlagen). [1963] [22]p. 3 refs.
Order from OTS or SLA $2.60 63-14440

Trans. from mono. Ausgewählte Fragen über Theorie und Technik von Antennen. Heft 2:[Breitbandantennen, Transformatoren und Kabel (Selected Questions Regarding Theory and Antenna Technique. Book 2:[Broadband Antennas, Transformers and Cables]) n.p. [Feb 48]. (PB-89013)

DESCRIPTORS: *Broadband antennas, Antennas, Direction finding, Installation.

Mechanical Engineering

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 13. 26 June 63 [16]p. JPRS:19869.
Order from OTS $0.50 63-31121

Trans. of 9 selected articles of 1963 issues of the Russian Newspapers Sovetskaya Belorussiya, Leningradskaya Pravda, Sovetskaya Kirgiziya, Sovetskaya Rossiya, and Stroitel'naya Gazeta.

DESCRIPTORS: *Industrial production, *Power equipment, *Machines, *Steam turbines, Electric power production, Gas turbines, Hydroelectric power systems, *Turbines, *Generators, Steam, Iron, Casting, *Pumps.

Contents:
New turbines with 300-800 thousand kilowatt capacity
New design for steam turbine assembly
Turbine builders pledge increased production
Production on new high capacity turbine begun
High capacity steam turbines assembled on one stand
Turbo-generator production increased for May-Day
High-pressure steam-generator VPG-50
Increased norms for cast iron production
A small-gage turbo-pump.

Höfer, A.
IMPROVING THE RUNNING PROPERTIES OF TRAVELLING CRANES BY PROVIDING ADJUSTABLE BEARINGS FOR THE CRANE WHEEL AXLES. June 63.
Order from BISI £5 10s BISI-3125

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 9] p. 518-525.

DESCRIPTORS: *Hoists, *Axle shafts, *Bearings, Operation.

Simon, R.
EXPERIENCES WITH AIR-CONDITIONING PLANT IN CABS OF PIT FURNACE CRANES. June 63.
Order from BISI £4 BISI-3213

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 3] p. 166-172.

DESCRIPTORS: *Air conditioning equipment, Hoists, Furnaces, Design, Operators (Personnel), Physiology.

Ordnance, Missiles, and Satellite Vehicles

SPACE: USSR VS. USA. 16 Jan 63 [7]p. FTD-TT-63-43.
Order from OTS or SLA $1.10 63-19263

Unedited rough draft trans. from Vodnyi Transport (USSR) 1962, 4 Aug, p. 3.

DESCRIPTORS: *Space flight, *Manned spacecraft, Control systems, Political science.

Rebrov, M.
THE VOSTOK OBEYS THE COSMONAUT (THE ORIENT LISTENS TO THE COSMONAUT). 4 Apr 63 [12]p. FTD-TT-62-1685.
Order from OTS or SLA $1.60 63-19313

Unedited rough draft trans. from Pravda Ukrainy (USSR) 1962, no. 86(6105) 11 Apr, p. 4.

DESCRIPTORS: *Space flight, Satellites (Artificial), *Astronauts.

Sokolovskii, V. D., ed.
SOVIET MILITARY STRATEGY, tr. and annotated by Herbert S. Dinerstein and others. 1963, 1v.
Order from Prentice-Hall, Inc., Englewood Cliffs, N. J. $7.50 plus postage

Trans. of mono. [Voennaya Strategiya, Moscow, 1962, 457p.].
Another trans. is available from OTS or SLA $26.00 as 63-15025, FTD-TT-62-1289, 20 Nov 62 [618p.].

DESCRIPTORS: *Political science, Communism, Economics, Military intelligence, Warfare, *Armed forces (Foreign), Leadership, *Armed forces operations, *Strategic materials, *War potential, Satellite vehicles, National defense, Civil defense systems, Foreign policy, Economic warfare, Nuclear weapons.

Sanitation and Safety Engineering

Gillissen, G.
REMOVAL OF MICRO-ORGANISMS BY MEANS OF ION EXCHANGERS. 18 June 62, 7p. (figs. 4 tables omitted).
Order from SLA $1.10 63-14031

Trans. of Gesundheits-Ingenieur (West Germany) 1960, v. 81, no. 7, p. 207-210.

DESCRIPTORS: Microorganisms, *Bacteria, *Ion exchange resins, Purification.

With anion exchanger columns, but not with a cation exchanger, it was possible to remove Coli bacteria from a water suspension. With the same exchange

amounts and the same passage speed, the filling height of the column is important to the effect observed. The capacity of a newly filled exchanger does not decrease after being used several times by regenerating it with NaOH each time. On the contrary, it becomes better. To attain fractions free of bacteria, the exchanger capacity depends less on the number of cells adsorbable in all than on the cell concentration of the germ suspension. The bacteriological capacity of the anion exchanger decreases greatly by loading with NaCl and is practically prevented by an antistatic treatment. Regenerating the exchanger with the disinfectant NaOCL is possible in principle, but the capacity of the exchanger decreases with the use of higher concentrations. (Author)

Tandberg, John.
WARNING FOR ETHER EXPLOSIVES. [1963] 3p.
Order from SLA $1.10 63-14849

Trans. of Teknisk Tidskrift (Sweden) 1938 [v. 68] no. 24, p. 295-296.

DESCRIPTORS: *Explosive materials, *Ethers, *Peroxides, *Ethyl ethers, *Safety, Hazards, Accidents, Tests, Distillation.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

PROCEDURE FOR THE DRY KEEPING OF POWDERY COMPOSITIONS CONTAINING PECTIN AND ACID. [1963] 2p.
Order from OTS or SLA $1.10 63-14788

Trans. of Swiss patent 226,920, appl. 13 July 42, registered 15 May 43, pub. 2 Aug 43 (priority: Germany, 25 July 41).

DESCRIPTORS: Preservation, Food, *Dehydrated foods, *Pectins, *Acids, Powders.

Avdeeva, A. B , Sokolovskii, A. L., and Tziganova, P. A.
CORROSION STABILITY OF METALS IN SUGAR AND CARAMEL SIRUPS. [1963] 6p.
Order from OTS or SLA $1.10 63-16349

Trans. of Khlebopekar[naya] i Konditer[skaya] Prom[yshlennost'] (USSR) 1957, v. 1, no. 4, p. 12-14.

DESCRIPTORS: *Corrosion, Metals, *Carbohydrates, Liquids, Acids, Lactic acid, Citric acids, *Steel, *Chromium alloys, *Nickel alloys, *Carbon alloys, *Aluminum, *Copper, Iron, Bakery products.

An investigation was made of the corrosion stability of metals used in the pastry industry. The resistance to corrosion was determined by the loss in weight suffered by test specimens of different metals after their exposure to corroding agents for a predetermined period of time. Sugar and caramel sirups were used as corroding media, under laboratory as well as process conditions. Chromium steel was stable in all sirups. Chromium-nickel steel was stable in caramel sirup from invert but somewhat less stable in acid sugar sirup and in invert and caramel sirup prepared respectively from normal molasses and invert. Aluminum is stable in sugar sirup and caramel sirup from invert. Corrosion of aluminum occurs in acidified sirup prepared according to the normal formula. Copper undergoes corrosion in acidified sirups. Carbon steel was unstable in all tested sirups. Under process conditions, copper and iron were unstable as materials of the tanks used for dissolving and boiling the caramel mass. Carbon steel was unstable as material of the tank for boiling caramel sirup. Chromium and chromium-nickel steels were stable in all process conditions.

Belderok, B.
THE VISCOMETRIC METHOD TO DETERMINE THE ALPHA-AMYLASE ACTIVITY IN THE INDIVIDUAL GRAIN KERNELS AND AS SUCH APPLICATION IN CONCEALED SPROUTING. [1963] 13p. 11 refs.
Order from SLA $1.60 63-14865

Trans. of Getreide und Mehl (West Germany) 1957, v. 7, no. 9, p. 77-80.

DESCRIPTORS: *Glycoside hydrolases, *Starches, Flour, *Bakery products, Dextrins, *Viscosimeters, Enzymes, *Seeds, Growth.

Distel, Walter and Hansen, Friedrich.
PROCEDURE FOR MANUFACTURE OF A COFFEE FLAVORED EXTRACT IN THE FORM OF TABLETS. [1963] 2p.
Order from OTS or SLA $1.10 63-14789

Trans. of Swiss patent 176,912, cl. 34d, appl. 23 May 34, registered 15 May 35, pub. 16 July 35.

DESCRIPTORS: *Coffee, Taste, *Condiments, Production

Dörner, H.
RECENT DEVELOPMENTS ON THE BROWNING PROPERTY OF SUGAR VARIETIES. [1963] 9p 2 refs.
Order from SLA $1.10 63-16311

Trans. of [Brot und Gebäck] (West Germany) 1950 [v. 4] no. 5/6, p. 67-69.

DESCRIPTORS: *Carbohydrates, Colors, *Glucose, *Lactose, *Hydrogen ion concentration, *Bakery products, Bread, Flour.

Fincke, Albrecht.
THE USE OF "LIQUID SUGAR" IN THE USA. [1963] 13p. 7 refs.
Order from SLA $1.60 63-14859

Trans. of Zucker- und Süsswarenwirtschaft (West Germany) 1954, v. 7, p. 796-800.

DESCRIPTORS: *Carbohydrates, Sucrose, Liquids, Storage, Transportation.

This is a summary about the manufacture, transportation, storage, and use of the liquid sugar in U. S. A.

Fong, Yih-sen.
PROCESS FOR THE MANUFACTURE OF SODIUM GLUTAMATE. [1963] 5p.
Order from OTS or SLA $1.10 63-14517

Trans. of French patent 669,815, filed 18 Feb 29, issued 10 Aug 29, pub. 21 Nov 29.

DESCRIPTORS: Production, *Sodium compounds, *Glutamic acid, *Gluten, *Condiments, Taste.

For the manufacture of sodium glutamate, a process is claimed, comprising the method of hydrolyzation of reasonably dry gluten, preferably in finely ground form with relatively concentrated hydrochloric acid to obtain glutamic acid hydrochloride. The method consists in the conversion of the said hydrochloride of glutamic acid into free glutamic acid, in neutralizing the said acid with soda ash, bicarbonate of soda or caustic soda, but preferably with soda ash and in the separation of the so formed sodium glutamate. (Author)

Förster, G.
CONNECTIONS BETWEEN ENDOSPERM ASH AND PROTEIN CONTENT [Zusammenhänge zwischen Endospermasche und Eiweissgehalt bei Weizen]. 4 Nov 60, 6p. 6 refs.
Order from SLA $1.10 63-16310

Trans. of die Mühle (West Germany) 1960, v. 97, no. 25, p. 317-318.

DESCRIPTORS: *Wheat, *Ash, *Proteins, *Flour, Chemical analysis, Bakery products.

Topics include: Distribution of ash and protein in endosperm; ash content and protein content in wind-sifted flours; and protein content, endosperm ash and whole kernel ash.

Förster, G.
SOME CONSIDERATIONS REGARDING THE DEGREE OF FINENESS AND THE IMPACT GRANULATION OF FLOURS. [1963] 15p. 15 refs.
Order from SLA $1.60 63-14786

Trans. of die Mühle (West Germany) 1956, v. 93, no. 21, p. 291-294.

DESCRIPTORS: *Flour, Particles, Seeds, *Starches, *Proteins, Particle size, *Cells (Biology).

Fritsch, F.
TO THE END OF THE YEAR 1959 AND THE START OF 1960 (Zum Jahreswechsel 1959/60). [1963] [4]p. (foreign text included).
Order from SLA $1.10 63-14785

Trans. from die Müllerei (West Germany) 1959, v. 12, no. 52.

DESCRIPTORS: *Flour, Material separation, Wheat.

A state-of-the-art review concerning the wind-sifting of flour.

Garino, Mario.
THE DETERMINATION OF THE HUMIDITY OF REFINED SUGAR. [1963] 4p. (figs. omitted).
Order from SLA $1.10 63-14880

Trans. of Industria Saccarifera Italiana, 1954, v. 47, p. 204-206.

DESCRIPTORS: *Moisture, *Carbohydrates, Gravimetric analysis, Absorption, Determination.

The agreement between the weighing method and the "Damptester" method [used in this research] is more easily obtained by drying the sugar in a metal receptacle closed by paraffin than by any other means. The agreement within the limits cited can be obtained for sugar refined with less than .004% of ash and less than .003% of invert. Beyond these values there were found discrepancies which are not easy to explain and it is difficult to say whether one is farther from the truth with the data obtained by the weighing method or by the other.

Green, Albert.
PROCESS FOR MANUFACTURE OF PREPARATIONS WHICH ARE NECESSARY FOOD ADDITIVES FOR NORMAL BODY FUNCTIONING TO MAKE THEM MORE UNIFORMLY DISTRIBUTABLE IN FOODSTUFFS. [1963] [9]p.
Order from OTS or SLA $1.10 63-14946

Trans. of Swiss patent 260,075, cl. 34d, pub. 1 July 49, appl. submitted 15 Mar 45, registered 28 Feb 49 (priorities in Great Britain, 5 June, 3 Nov 43, and 17 Jan 44).

DESCRIPTORS: Processing, *Food, *Additives, *Nutrition, Physiology.

Gründer, W. and Sauer, H.
THE DETERMINATION OF GRANULAR CHARACTERISTICS CURVES AND SURFACES OF DISINTEGRATION PRODUCTS EXEMPLIFIED ON FLOUR. [1963] [36]p. (refs. omitted).
Order from SLA $3.60 63-14953

Trans. of Kolloid-Zeitschrift (Germany) 1937, v. 79, no. 3, p. 257-273.

DESCRIPTORS: Particles, *Particle size, *Cereals, Decomposition, Mathematical analysis, Optical analysis, *Flour, Determination.

Hagberg, Sven.
THE BAKE TECHNICAL IMPORTANCE OF THE DIASTATIC STATE AND ITS ANALYSIS. 9 Dec 60, 15p. 2 refs.
Order from SLA $1.60 63-16286

Trans. of mono. (special print) from International Bread [Congress] (no. 3) Hamburg, 1955.

DESCRIPTORS: *Glycoside hydrolases, *Bread, *Flour, Cereals, Carbohydrates, Bakery products, *Fermentation, Agglutination, Enzymes, Moisture, Analysis, Gases, Starches, Sodium compounds, Chlorides.

Hennecke, H. and Lamprecht, F.
CONTRIBUTIONS TO QUALITY IMPROVEMENTS OF OUR FOODS. III. LEAVENING AGENTS IN DRAWING FATS. [1963] 3p.
Order from SLA $1.10 63-14961

Trans. of [Fette Seifen Anstrichmittel] (West Germany) 1952, v. 54, no. 3, p. 147-149.

DESCRIPTORS: Food, Fats, *Bakery products, *Margarine

Hess, Kurt.
METHOD FOR TREATING FLOURS. 14 Feb 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-14982

Trans. of French patent 1,218,717, requested 17 Jan 59, issued 21 Dec 59, pub. 12 May 60 (request for pat. filed with German Federal Republic, 18 Jan 58 in name of inventor).

DESCRIPTORS: Processing, *Flour, *Bakery products, Quality control.

A description is given of a method to improve the properties of fine powders, especially flours, in regard to their ability to bake.

Hess, Kurt.
PROTEIN, GLUTEN, AND LIPOID IN THE WHEAT GRAIN AND IN THE FLOUR (Protein, Kleber und Lipoid in Weizenkorn und Mehl). [1963] [43]p. (foreign text included) 20 refs.
Order from SLA $4.60 63-14962

Trans. of Kolloid-Zeitschrift (West Germany) 1954, v. 136, no. 2/3, p. 84-99.

DESCRIPTORS: *Wheat, *Flour, *Proteins, *Gluten, *Fats, Seeds, Bakery products, *Starches, Phospholipids, Microanalysis, Chemical analysis, Surface properties, Physical properties.

Hess, Kurt.
PROTEIN MATTER AND BAKING QUALITY. [1963] 7p. 1 ref.
Order from SLA $1.10 63-14963

Trans. of Getreide und Mehl (West Germany) 1955, v. 5, no. 11 [p. 82-84].

DESCRIPTORS: *Proteins, *Bakery products, Cereals, *Flour, Starches, Chemical analysis.

Kirschner, M. and Hoppe, Helga.
DETERMINATION OF THE GELATINIZATION TEMPERATURE OF DIFFERENT STARCHES AND THE INFLUENCE OF THIS TEMPERATURE ON THE DEVELOPMENT OF DAMAGE BY ENZYMES TO BAKED GOODS FROM GERMINATION. 20 Sep 55, 8p. 2 refs.
Order from SLA $1.10 63-14878

Trans. of Brot und Gebäck (West Germany) 1955, v. 9, p. 103-105.

DESCRIPTORS: *Gelatins, *Starches, Temperature, *Enzymes, Flour, Rye, Wheat, Bread, Processing, Seeds, Growth, Food, *Bakery products.

A simple method for the determination of the gelatinization temperature of starch was developed and the values for various common kinds of starches were established. Under consideration of the obtained values for rye and wheat starch on one hand, and the temperature optimum of the starch liquifying portions of the diastase on the other, the fact is explained that even strongly germinated (sprouted) wheat flours in the baking test with yeast, never result in similar baked products, as are obtained under identical experimental conditions from germinated rye flour. From the results of the baking, tests can further be concluded that baking deficiencies in the processing of germinated rye flour must be overcome in the first place by measures, which decelerate the ferment during the baking process. The influence of fermentation and preparation of the dough is much less important, than the starch damage during the baking process. It could be demonstrated that one and the same ferment extract used as added liquid will seriously damage starch with lower gelatinization temperature during the baking process, while starch with high gelatinization temperature is hardly weakened. (Author)

Königsmann, F.
THE ECONOMY OF THE DIRECT STEAM CONDITIONING (Die Wirtschaftlichkeit der Direkten Dampfkonditionierung). [1963] 8p. (foreign text included) 5 refs.
Order from SLA $1.10 63-16395

Trans. of die Getreidemühle (East Germany) 1958 [v. 2] no. 8. p. 174-175.

DESCRIPTORS: *Cereals, *Steam, Processing, Economics, *Flour, Production.

Lengelle', Maurice.
NEW GRINDING PROCESS FOR AGRICULTURE PRODUCTS. [1963] 4p. (fig. omitted) 2 refs.
Order from SLA $1.10 63-14968

Trans. of Getreide und Mehl (West Germany) 1955, v. 5 [no. 1] p. 6-7.

DESCRIPTORS: *Grinders, *Milling machines, Cereals, *Flour, Processing.

Lida, Yasuo.
A METHOD FOR INCREASING THE SWEETNESS OF BEET SUGAR. [1963] [8]p. 5 refs.
Order from SLA $1.10 63-16359

Trans. of Eiyo to Shokuryo (Japan) 1955/56, v. 8, p. 170-173.

DESCRIPTORS: *Beets, *Taste, Sucrose, Food, Carbohydrates, Chemical analysis, Processing.

The sweetnesses of cane sugar and beet sugar differ because of the properties and composition of the minute quantities of ash present. Cane sugar contains more calcium salts in its ash, whereas beet sugar contains more potassium salts. Due to the relatively high concentrations of potassium salts in beet sugar its sweetness is decreased compared to cane sugar. The addition of suitable amounts of calcium salts to beet sugar increases its sweetness until it is comparable to cane sugar. The addition of K_2CO_3 to the sugar decreases its sweetness. And for the same reason beet sugar is less sweet than cane sugar The addition of K_2CO_3 does not give the same results. If during the beet sugar manufacturing process, the alkali-carbonate, such as K_2CO_3, is neutralized with chemically pure sulfuric acid solution, so that carbonate is converted to sulfate, then the sweetness of beet sugar is increased. (Author)

Maes, E.
THE DETERMINATION OF WATER ABSORPTION IN FLOUR WITH THE HELP OF PENETROMETER. [1963] [8]p. 6 refs.
Order from SLA $1.10 63-14966

Partial trans. (sects. 2-4) of Brot und Gebäck (West Germany) 1957, v. 11, no. 9, p. 187-189.

DESCRIPTORS: *Water, Absorption, *Flour, Bread, Bakery products.

A penetrometer was developed which could be of help in small bakeries for determination of dough consistency and by doing this it should be possible to add the right amount of water in kneading process for absorption for flour within 0.5%.

Mühlenwarke, Heinrich Auer.
PROCESS FOR THE OBTAINMENT OF GLUCOSE FROM STARCH CONTAINING MILLING PRODUCTS. [1963] 9p. 1 ref.
Order from OTS or SLA $1.10 63-14794

Trans. of German patent 1,000,300, A 20833 IV a/89i, filed 27 July 54, pub. 3 Jan 57.

DESCRIPTORS: Separation, *Glucose, *Starches, Cereals.

Nenninger, E.
AIR CLASSIFICATION OF WHEAT MILLS. Referring to a lecture at Jugenheimer Convention (no. 9) Darmstadt. [1963] [8]p.
Order from SLA $1.10 63-16488

Trans. of die Mühle(West Germany) 1959, v. 96, no. 17, p. 215-217.

DESCRIPTORS: *Wheat, Material separation, Classification, *Flour, Bakery products, Particle size.

Pietermaat, F. P. and Maes, E.
THE ULTRA-RAPID DETERMINATION OF HUMIDITY IN FLOURS AND GLUTEN DRIED IN A HIGH FREQUENCY ELECTRIC FIELD. [1963] [10]p. 3 refs.
Order from SLA $1.10 63-14971

Trans. of Fermentatio (Belgium) 1955, no. 1, p. 30-38.

DESCRIPTORS: *Moisture, Determination, *Flour, *Gluten, Electric fields, Heating, Dehydration, Electrochemistry.

Rohrlich, M. and Benischke, H.
DETERMINATION OF LIPASE IN WHEAT PRODUCTS. [1963] [19]p. 16 refs.
Order from SLA $1.60 63-14973

Trans. from Getreide und Mehl (West Germany) 1951, v. 1, no. 8.

DESCRIPTORS: Wheat, *Bakery products, *Flour, *Enzymes, Fermentation, Fats, Vegetable oils, Chemical analysis, *Lipases.

The factors which influence the determination of lipase in flour, if the Sullivan-Hove method is applied, were isolated, and a detailed and simplified procedure for the determination of lipase is given. The activity of lipase in wheat, rye, and barley flour was examined with the above method, and the activity of lipase on different vegetable oils (linseed oil, rapeseed oil, wheat, rye, and oat fat) was studied. It was observed that oat lipase has a certain specificity to oat fat. (Author)

Schou, Herbert.
PROCESS FOR THE PRODUCTION OF PASTRY. [1963] 3p.
Order from OTS or SLA $1.10 63-14787

Trans. of Swiss patent 247,699, appl. presented 20 Sep 45, registered 31 Mar 47, pub. 16 Dec 47 (priority: Denmark, 25 Mar 44)

DESCRIPTORS: Production, *Bakery products, Processing.

Schuphan, W.
THE EXOGENOUS AMINO ACIDS. [1963] [19]p. (tables not translated) 36 refs.
Order from SLA $1.60 63-16099

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Amino acids, *Proteins, *Nutrition, Diet, *Vegetables, Plants (Botany), Geography.

Seibel, W.
DETERMINATION OF THE WHEAT QUALITY FROM THE SEDIMENTATION VALUE OF ZELENY. [1963] 2p.
Order from SLA $1.10 63-14974

Trans. of Die Mühle (East Germany) 1960, v. 97, no. 29, p. 373.

DESCRIPTORS: Chemical analysis, *Wheat, *Flour, *Quality control, Food.

Wutzel, H.
ABOUT A NEW POSSIBILITY FOR THE INVESTIGATION OF THE DOUGH MATURITY PROCESS (Über eine Neue Möglichkeit zur Untersuchung von Teigreifungsvorgängen). [1963] [30]p. (foreign text included) 23 refs.
Order from SLA $2.60 63-14979

Trans. of Brot und Gebäck (West Germany) 1960, v. 14, no. 11, p. 215-223.

DESCRIPTORS: *Bread, Processing, *Fermentation, Yeasts, Food, Temperature, *Bakery products.

After a demonstration of several known methods for fermentation and driving force determination of baking yeast, a new operation method with the fermentation writer was discussed, whereby the gas retention capacity of wheat dough can be determined. With this new method, the influence of various baking technical measures on the gas retention capacity was investigated. It could be affirmed, that a higher yeast proportion, a higher dough temperature and a more intensive dough kneading could lead to an earlier occurence of the maximal gas retention capacity. Furthermore, the pH-zone at 5,0 was recognized as optimal for the gas retention capacity of the wheat doughs. Finally it was found that a favorable influence on the dough properties will be obtained with a lower dough temperature, which can not be obtained with a higher temperature. Herewith the investigations of other authors were confirmed, who have emphasized the superiority of a cooler however, rapid wheat dough conduction. (Author)

Yanagawa, Tetsunosuke and Nishida, Hoshio.
STUDIES ON PROTEINS. IV. ON THE TASTE-PRODUCING AMINO ACIDS. [1963] 33p.
Order from SLA $3.60 63-14651

Trans. of [Osaka Kogyo Gijutsu Shinekjo Hokoku] (Japan) 1936, v. 16, no. 10, p. 1-26.

DESCRIPTORS: *Proteins, *Amino acids, *Condiments, *Taste, *Sodium compounds.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 34. 18 June 63 [11]p.
JPRS: 19728.
Order from OTS $0.50 63-31067

Trans. of 13 selected short articles from 1963 issues of Trud (Moscow), Leningradskaya Pravda, Tekhnika Molodezhi, Kazakhstanskaya Pravda, and Ekonomicheskaya Gazeta.

DESCRIPTORS: *Industrial production, *Machines, *Construction, *Excavators, Hoists, Drills, Lathes, Cargo vehicles, Management engineering, Industrial plants.

Contents:
Construction machinery advertisements
"Corkscrew" screw pile machine
Problem of irregular production.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 55. 27 May 63, 7p.
JPRS: 19420.
Order from OTS $0.50 63-21922

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 3, p. 22-23, 26-34.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Machining, *Milling machines, *Grinders.

Contents:
Mechanized continuous-flow production line for machining of cast parts, by Yu. G. Mel'bart
Unit-type semi-automatic milling machine tool model AF5, by M. Ya. Zlatopol'skii (excerpt)
New Surface-grinding machine tools, by M. I. Gurevich.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 56. 31 May 63, 10p.
JPRS: 19514.
Order from OTS $0.50 63-21966

Trans. of Stanki i Instrument (USSR) 1963 [v. 34] no. 4, p. 1-2; selected items from Referativnyi Zhurnal. Tekhnologiya Mashinostroeniya (USSR) 1963, no. 3, p. 150-152, 208; and from Sovetskaya Latviya (USSR) 1963, 22 Feb, p. 1; Vechernyaya Moskva (USSR) 1963, 16 Feb.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Abstracts, *Milling machines, *Grinders, Precision equipment, *Broaches, Control systems, Drilling machines, Machine tool industry.

Contents:
Abstracts on metal-cutting machines and automatic lines (3B829, 3B840, 3B241, 3B1147)
Grinding machine with 0.1 micron precision
An electric-pulse push-broaching duplicating machine
Achievements and prospects of the Soviet Union in the field of machine-tool building (excerpt).

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 76. 11 June 63, 28p.
JPRS: 19659.
Order from OTS $0.75 63-31037

Trans. of 12 selected articles from Oct 62-Feb 63 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Cable reels, Vehicle instruments, *Personnel management, Labor, Range finding, *Balances, Gas analysis, Spectrum analyzers, Oscillographs.

Contents:
A new semi-automatic cable-twisting machine
Poor quality of locomotive speedometers, by A. Grabchak
Activity at the Frunze physical-instruments plant, by V. Dmitriev
New ways for increasing production at Ust'-Kamenogorsk instruments plant, by A. Zlotnikov
A new experimental plant for the Central Technological Design Bureau, Latvian sovnarkhoz, by D. Erglis
A new electronic-optical range-finder, by Rudol'f Svoren'
Activity at the Echmyadzin plastics plant, by A. Novgorodtsev
Production of the Erevan instrument-building plant, by G. Tigranyan
New instruments manufactured and for sale
Personnel problems at the Teplokontrol' plant, by R. Musin
A machine for winding coils automatically, by Z. Fedorova
Some operations of the Orekhovo-Zuevo Pribordetal' plant, by G. Malobrodskii.

WINDER WITH AUTOMATIC THREAD CUTTER, tr. by F. H. B. 19 Mar 63, 13p. (figs. omitted).
Order from OTS or SLA $1.60 63-19067

Trans. of French patent 952,571, gr. 4, cl. 1, by Zbrojovka Brno, Narodni Podnik (Usines d'Armes de Brno, Entreprise Nationale) Czechoslovakia, appl. 28 Aug 47, granted 2 May 49, pub. 21 Nov 49 (priority claimed, based on appl. in Czechoslovakia, 5 Sep 46).

DESCRIPTORS: *Reels, Automatic, Threads, *Cutting tools.

Kramer, Josef.
BAND SAW TABLE, tr. by J. B. 20 Mar 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19061

Trans. of German patent 826,640, cl. 38a, gr. 4, pat. from 6 Nov 48, granted 29 Nov 51, pub. 3 Jan 52.

DESCRIPTORS: *Band saws, Tables, Industrial equipment.

Kuznetsov, V. I.
PROGRAM CONTROL OF METAL CUTTING MACHINES. 12 Mar 63 [8]p. (figs. omitted).
FTD-TT-62-1759. AD-402 443
Order from OTS or SLA $1.10 63-19428

Unedited rough draft trans. of mono. Dostizheniya v Oblasti Tekhnicheskogo Progressa v SSSR [Achievements in the Field of Technical Progress in the USSR, Moscow] 1961, p. 152-157.

DESCRIPTORS: *Machine tools, *Cutting tools, *Automation, *Programming (Computers), *Control systems, Photoelectric transducers, Phase control devices, Magnetic tape, Punched tape, Milling machines, Lathes.

Polysius, Karl Otto.
DEVICE FOR GRANULATION OF POWDERY OR GRITTY MATERIAL. [1963] [10]p.
Order from OTS or SLA $1.10 63-14799

Trans. of German patent 915 072, cl. 80c. gr. 17 10, P 735IV/80c, patented 21 Mar 52, pub. 10 Dec 53, granted 3 June 54.

DESCRIPTORS: *Milling machines, Powders, Cements, Materials, Design.

The invention concerns a device for granulation of powdery or gritty materials, especially raw cement powder, whereby in a new manner, several granulation plates which rotate with variable rotational speed in a well known slanting position, are arranged concentrical above each other or inside each other.

Pratique, Jean.
THE EFFICIENCY OF ROLLER MILLS. [1963] [20]p.
Order from SLA $1.60 63-14972

Trans. of École Française de Meunerie. Bulletin [des Anciens Élèves] 1956, no. 155, p. 223ff.

DESCRIPTORS: *Milling machines, *Cereals, Grinders, Mathematical analysis, *Rolling mills, Effectiveness.

Pratique, Jean.
IMPROVEMENTS FOR ROLLER MILLS. [1963] [8]p.
Order from OTS or SLA $1.10 63-14938

Trans. of French patent 1,138,694, B 02 c, appl. filed 21 Dec 55, issued 18 June 57.

DESCRIPTORS: *Milling machines, Cereals, Design, Operation, *Rolling mills.

Pratique, Jean.
IMPROVEMENTS OF THE FEEDING EQUIPMENT OF ROLLER MILLS. [1963] [5]p.
Order from OTS or SLA $1.10 63-14937

Trans. of French patent 1,058,697, appl. filed 25 June 52, issued 18 Mar 54.

DESCRIPTORS: *Milling machines, Materials, Injection, Design, *Rolling mills.

A new type of distribution system is described which permits the products to arrive at the inlet of the operating zone, tangentially to the rolls at a linear speed close to the medium linear speed of the rolls. (Author)

Sindeev, P. R.
THE SYSTEM OF THERMAL DRILLING AND THE STRUCTURAL ELEMENTS OF THE BURNER. [1963] 15p.
Order from ATS $17.75 ATS-83Q68R

Trans. of Akad[emiya] Nauk Kazakh[skoi] SSR [Alma-Ata]. Vestn[ik] 1959 [v. 15] no. 2(167) p. 50-63.

DESCRIPTORS: *Well drilling, *Torches, Drilling machines, Design, Construction.

Wigef, A.
ABOUT THE PRATIQUE SYSTEM (OBSERVATIONS AND EXPERIENCES). [1963] 5p.
Order from SLA $1.10 63-16485

Trans. of die Mühle (West Germany) 1957, v. 94, no. 47, p. 67-68.

DESCRIPTORS: *Milling machines, Cereals, Injection, Operation, *Rolling mills.

Engines and Propulsion Systems

INFLUENCE OF CHLORINE DIOXIDE UPON THE OPERATION OF A DIESEL ENGINE. 8 Dec 48, 2p. 1 ref.
Order from OTS or SLA $1.10 63-16045

Trans. from mono. (report) of I. G. Farbenindustrie A. G., Griesheim, n.d. (PB-70493-C).

DESCRIPTORS: *Diesel engines, *Chlorine compounds, *Dioxides, Operation.

PARAMETERS OF EXISTING AIR-BREATHING AND ROCKET ENGINES: REVIEW OF SOVIET LITERATURE 1950-62. 8 Mar 63 [38]p. 37 refs. AID rept. P-63-32.
Order from OTS or SLA $3.60 63-19032

DESCRIPTORS: *Airplane engines, *Turbojet engines, Ducted fans, *Turbopropeller jet engines, *Ramjet engines, *Rocket motors (Liquid propellent), *Rocket motors (Solid propellant), Specifications, Temperature, Pressure, Velocity, Fuel consumption, Thrust, Power, Effectiveness, *Bibliography.

Contents:
Foreward
Introduction
Summary presentation of basic parameters
General discussion by the analyst
Parameters of existing air-breathing and rocket engines.

Blume, K.
MEANS OF CONTROLLING AND REGULATING THE COURSE OF COMBUSTION IN INJECTION MOTORS. PT. 5. MIXTURE FORMATION AND COMBUSTION IN THE BOMB. [1963] 7p. (figs. omitted).
Order from SLA $1.10 63-16162

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1943, v. 46, p. 36-39.

DESCRIPTORS: *Diesel engines, Combustion chamber gases, *Combustion, Ignition, Ignition Lag, Gas flow, Fuel injection, Mixtures, Test equipment.

Bodner, V. A. and Ryazanov, Yu. A.
ON THE PROBLEM OF SYNTHESIZING BLOCK DIAGRAMS FOR SELF-ADJUSTING CONTROL SYSTEMS FOR TURBOJET ENGINES WITH AFTERBURNERS. 26 Feb 63 [24]p. FTD-TT-62-1655.
Order from OTS or SLA $2.60 63-19175

Unedited rough draft trans. of Avtomaticheskoe Regulirovanie Aviadvigatelei (USSR) 1961, v. 3, p. 33-50.

DESCRIPTORS: *Airplane engines, *Turbojet engines, Rotation, Velocity, Gases, Temperature, *Control systems, *Adaptive control systems, Circuits, Synthesis, *Afterburners.

The investigation shows that the optimal transient under all flight conditions may be obtained by varying the parameters of the correction circuits of the speed of revolution and gas temperature controls. The choice of the optimal value for the parameters of the correction systems of the controllers may be effected by means of special self-adjustment circuits which include functional formation elements and elements for finding and realizing the extremum of this functional. The self-adjustment circuits used in connection with the circuits for control of speed of revolution and gas temperature in the engines turn out to be practically identical and this facilitates the realization of these circuits. The use of self-adjustment circuits for obtaining optimal transients permits the creation of engine control systems which operate over a wide range of flight regimes. (Author)

[Dobke, H.].
DEVELOPMENT OF AN EXHAUST GAS COLLECTOR WITH FLAMELESS EXHAUST. 14 Aug 47, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-14801

Trans. from mono. [Untersuchungen an Auspuffsammlern Entwicklung eines Auspuffsammlers mit Flammenlosen Abgasaustritt, 1 Zwischenbericht, n.p., July 35, 6p.] (PB-38446).

DESCRIPTORS: *Exhaust gases, Internal combustion engines, Cooling, Exhaust flames, *Exhaust systems.

In order to find a basis for the construction of flame dampers, the exhaust gases from a test engine were collected and cooled. On cooling to 400°C., the exhaust gas issuing from the collecting tube was free of flame. (Author)

Gavrilenko, B. A., Minin, V. A. and others.
A TURBOCLUTCH WITH AN OVERRUNNING DEVICE. 14 Mar 63 [5]p. FTD-TT-63-15. AD-400 528.
Order from OTS or SLA $1.10 63-19155

Unedited rough draft trans. of Soviet patent 142847 (678567/25) 12 Sep 60.

DESCRIPTORS: *Turbine parts, Transmissions, *Automatic transmissions, *Clutches, Design, Pumps, *Hydraulic systems.

The invention concerns a turboclutch with an overrunning device differing in that, for the purpose of decreasing the weight and axial dimensions of the clutch, the vanes

of its pump wheel are hinged to the hub on trunnions which interact with springs which tend to turn the vanes in a direction opposite to that of the flow. For the purpose of arranging the vanes around the hub when the clutch is disengaged, the vanes are sickle-shaped. (Author)

List.
EFFICIENCY AND THE COURSE OF COMBUSTION IN THE DIESEL MOTOR. 16 Feb 48, 7p. (figs. omitted).
Order from SLA $1.10 63-10997

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Combustion, *Fuel oil, *Diesel engines.

Popov, K. M. and Samoilovich, G. S.
THE COOLING OF THE TURBINES OF HIGH-TEMPERATURE GAS-TURBINE ENGINES [AND] A STUDY OF TRANSIENT AERODYNAMIC PHENOMENA IN AXIAL COMPRESSORS. 19 Mar 63 [42]p. 7 refs. FTD-TT-63-33. AD-402 473.
Order from OTS or SLA $4.60 63-19333

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mashinostroenie (USSR) 1960, no. 2, p. 19-30, 66-77.

DESCRIPTORS: *Gas turbine blades, *Cooling, Air, Liquids, *Axial-flow compressor blades, *Aerodynamic characteristics, Oscillation, Vibration, Fluid flow.

Different systems of cooling the blades of gas turbines are considered in the article. It is recommended that air cooling be used at gas temperature no higher than 1400°K. In order to increase the efficiency of liquid cooling it is advisable to use regeneration of the cooling heat. (Author)

Pischinger, F.
DESIGN DEVELOPMENT OF A COMBUSTION SYSTEM FOR TRACTION DIESEL ENGINES. [1963] [22]p. 5 refs.
Order from SLA $2.60 63-16287

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1963, v. 65, no. 1, p. 11-16.

DESCRIPTORS: *Diesel engines, Design, Combustion chamber gases, Ignition, Fuel injection, Gas flow, *Combustion chambers.

Setterberg, J. H.
OUTBOARD MOTOR STARTER, tr. by J. R.-P. 25 Mar 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19056

Trans. of Swedish patent 91,902, cl. 46 C:5/4, by Aktiebolaget Archimedes, appl. 19 Aug 36, granted 27 Jan 38, pub. 1 Apr 38.

DESCRIPTORS: *Motor starters, Marine engines, Design.

Sherstyuk, A. N., Zysina-Molozhen, L. M. and others.
DETERMINATION OF SPEEDS IN AXIAL TURBOMACHINES, TAKING INTO ACCOUNT DISTORTION OF CURRENT LINES IN MERIDIONAL PLANE [AND] HEAT TRANSFER IN TURBINE GRIDS. 8 Mar 63 [23]p. 7 refs. FTD-TT-62-1784. AD-299 413
Order from OTS or SLA $2.60 63-19162

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 7, p. 50-53 and 77-80.

DESCRIPTORS: *Turbines, *Axial-flow turbines, *Axial-flow compressors, Velocity, Measurement, Turbine parts, *Gas turbine blades, Geometric forms, Gas flow, *Heat transfer, Equations.

The authors describe a method for determination of speeds in axial turbines and compressors, taking into account distortions of current lines in meridional plane. Unlike pertinent publications, the problem is solved in this paper without successive approximations. (Sherstyuk and Novoderezhkin) Listed are results of calculating heat transfer and temperature fields, made for gas turbine vanes with consideration of inconstancy of the heat transfer coefficient along the contour of the profile and in height, and also with consideration of variability of lateral cross section. A comparison with experimental data is given. (Zysina-Molozhen, et al.)

Zaryankin, A. E. and Zatsepin, M. F.
ON THE INFLUENCE OF LOSSES IN THE RUNNER ON THE EFFICIENCY OF A RADIAL-AXIAL TURBINE. 4 Feb 63 [12]p. 2 refs. FTD-TT-62-1801; AD-299 672.
Order from OTS or SLA $1.60 63-19177

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Energetika (USSR) 1962 [v. 5] no. 4, p. 79-84.

DESCRIPTORS: Turbines, *Axial-flow turbines, Operation, Effectiveness, *Turbine parts, Bearings, Aerodynamic characteristics.

The extent of the effect of losses in the runner on the efficiency of a turbine stage depends significantly on the "radiality" of the runner and the value of the angle β_{2L}. This influence for active runners ($\rho_w = 0$) falls off markedly with a decrease in ν and an increase in the angle β_{2L}. In the case of radial-axial and radial stages for values of the geometrical parameter $\nu < 0.4$ a straight radical vane with the angle $\beta_{2L} = 90^\circ$ is best suited to the purpose, and the question of shaping it becomes significant only when $\nu > 0.4$. From the point of view of the efficiency of a radial stage it is most expedient when designing it to determine the minimum calculated reactivity from the formula $\rho = x_0^2 (1 - \nu_2)$. However, when we take into account the unfavorable shape of the vane at the inlet and the increased losses due to friction in the runner, we may take as the calculated reactivity a value equal to $\rho = (1,1 \div 1,2)\, x_0 (1 - \nu^2)$. (Author)

Zenukov, A. G.
THE PROBLEM OF COOLING GAS TURBINE VANES BY AIR. 26 Feb 63 [14]p. 5 refs. FTD-TT-63-70.
Order from OTS or SLA $1.60 63-19154

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962, no. 2, p. 130-137.

DESCRIPTORS: *Airplane engines, *Gas turbines, *Turbine blades, Design, Cooling, *Heat transfer, Protective coverings, Tensile properties.

The proposed vane design may be efficiently used at moderately high gas temperatures on the order of 800-900° C. The vane column in these conditions can be made of non-heat-resistant material. The use of a "cold" column leads to plate relief or decrease in its weight. Strength tests have demonstrated that this type of sleeve can operate in the given design and that rigidity loss phenomena need not be feared. (Author)

Machine Parts and Mechanisms

DISTRIBUTOR VALVE FOR COMPRESSED AIR BRAKES WITH A DIAPHRAGM AS CONTROL PISTON, tr. by F. H. B. 10 Apr 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19276

Trans. of Italian patent 271,056, cl. VI, to Knorr-Bremse Aktiengesellschaft, of Germany, running from 12 July 28, granted 28 Jan 30.

DESCRIPTORS: *Pneumatic brakes, *Pneumatic valves, Rubber, *Diaphrams (Mechanical), Design, Compressed air.

Elizabetin, M. A.
MECHANIZATION AND AUTOMATION OF MACHINE (MACHINE TOOL) CONTROL. 12 Feb 63 [33]p.
FTD-TT-62-1246. AD-401 725
Order from OTS or SLA $3.60 63-19160

Unedited rough draft trans. of mono. Mekhanizatsiya i Avtomatsiya v Mashinostroenii, Moscow, 1961, chap. 3, p. 58-81.

DESCRIPTORS: *Machine tools, *Automation, *Control systems, Classification, Design, Operation, *Programming (Computers), *Servomechanisms, Hydraulic servomechanisms, Pneumatic servomechanisms, Electrical equipment, Circuits, *Energy conversion, Computers, Potentiometers, Synchros.

Topics include: Classification and programs of control systems; open-loop automatic control systems (mechanical systems, hydraulic and electrohydraulic systems, pneumatic and electropneumatic systems, electric systems); closed-loop automatic control systems (computing unit, comparison units, measurement units, servosystems with computer-type comparison unit, potentiometer servosystems, servosystems with two selsyns); and, control with duplicating programs (electromechanical duplicating systems, hydraulic duplicating systems, electrohydraulic duplicating systems).

Manufacturing Equipment and Processes

CONVEYER CHUTE FOR THE PURPOSE OF CONVEYING POWDERY OR FINE GRITTY BULK GOODS, WHEREBY A GASEOUS PRESSURE COMPOUND WILL BE INTRODUCED INTO THE GOODS TO BE CONVEYED THROUGH ITS POROUS BOTTOM. [1963] 2p.
Order from OTS or SLA $1.10 63-16332

Trans. of [German patent] 720,178, by G. Polysius AG., pat. 28 Feb 40, grant pub. 12 Nov 42.

DESCRIPTORS: *Conveyors, *Powders, Gas flow, Industrial equipment.

METHOD FOR CARRYING OUT INDUSTRIAL PROCESSES IN A GLOW DISCHARGE, tr. by F. H. B. 17 Apr 63, 13p. (figs. omitted).
Order from OTS or SLA $1.60 63-19280

Trans. of Swiss patent 314,340, cl. 44b, to Elektrophysikalische Anstalt Bernhard Berghaus, appl. 17 Feb 53, pat. 15 June 56, pub. 31 July 56.

DESCRIPTORS: *Glow discharges, Energy, Distribution, *Cathodes, Design, Manufacturing methods, Annealing, Hardening, Vapor plating, Chemical reactions.

The invention relates to a method for carrying out technical processes in glow discharges, distinguished in that the energy of the glow discharge is increased in a predetermined section of the discharge space with respect to the other sections thereof, bringing two cathode drop spaces closer together. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 77. 19 June 63 [16]p.
JPRS: 19716.
Order from OTS $0.50 63-31059

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 3, p. 41-45, 77-79.

DESCRIPTORS: *Industrial production, *Precision equipment, Automation, Control systems, Amplifiers, Semiconductor devices, *Time-delay relays, Photosensitivity, *Electrical equipment, *Management engineering.

Contents:
New automation equipment, by Yu. P. Chuvaev and A. Ya. Chernoivannik
Quick-response secondary device working on the electric contact principle, by S. P. Malyshev and S. P. Protopopov
Organization of production operations planning and dispatch services at a precision equipment plant, by I. I. Vasil'ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 78. 18 June 63 [51]p.
JPRS: 19721.
Order from OTS $1.50 63-31063

Trans. of 11 selected articles from 1962-63 issues of 14 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Radio receivers, Television receivers, Reliability, Commerce, Clocks, Labor, Management engineering, *X-ray tubes, *Computers, *Mechanical organs, *Cameras, *Photographic equipment.

Contents:
Efforts to extend the service-life of radio and television sets, by Yu. Estrin
Drive for greater consumer goods production in Leningrad enterprises, by M. Baybikov
The director of the plant imeni Kozitskii complains about production policy, by Liventsov
A souvenir clock made by the first Moscow clock plant
1963 production plans for the Minsk radio plant
Discussion of personnel at the Voronezh elektrosignal plant, by V. Gromyko
Complaints about receivers made at the Chelyabinsk plant of the radiotechnical industry, by V. Bienko
Operational problems at the VEF plant, by E. Damberg
Moscow electric lamp plant fails to deliver special X-ray tubes, by I. Naidenov
The "Rekord-61M" radio receiver
A new attachment for electronic calculators
A new artificial larynx gives voice to the mute, by L. Alenin
Complaints of a "Kiev-4" camera purchaser, by G. Mokeev
Photographic equipment for sale by parcel post at Posyltorg.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 81. 26 June 63 [26]p.
JPRS: 19864.
Order from OTS $0.75 63-31116

Trans. of Mashinostroenie (USSR) 1963, no. 1, p. 57-60; Novye Tovary (USSR) 1963, no. 3, p. 1; Sovetskie Profsoyusy (USSR) 1963, no. 5, p. 15; and 6 selected articles from 1962-63 issues of 3 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Radio receivers, Quality control, *Test equipment, Meters, *Electric cables, *Computers, *Magnetic recording systems, Acoustic equipment, *Clocks, Commerce, Personnel management.

Contents:
Shortcomings at Minsk radio plant, by D. Yudelevich and B. Lipkovich
New instruments for non-destructive control methods, by S. M. Skorodzievskii
The first continuous production cable line in the USSR installed at "Tashkentkabel'" plant, by K. Safonov and F. Kamaev
Portable computer machine developed by computer center of Leningrad University
The new "Ausma" table radio
Defective products manufactured by Kiev radio-apparatus plant, by G. Kochergin
Excellence of Soviet watches for export, by E. Zhbanov
Plant committee of Ryazah' analytical computing machines plant fails to check observation of labor laws, by E. Milekman
The new "Minsk-62" radio receiver.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 82. 26 June 63 [27]p.
JPRS: 19885.
Order from OTS $0.75 63-31133

Trans. of 15 selected articles from 1963 issues of 11 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Hoists, Reliability, Quality control, *Test equipment (Electronics), Ultrasonic radiation, Instrumentation, *Television receivers, *Temperature control, Humidity, *Facsimile communication systems, Color photography, Industrial plants, *Radio receivers, Electron microscopes, Spectrum analyzers, *Refrigeration systems, Kitchen equipment and supplies, *Remote control systems, *Clocks, *Public address systems, Megaphones, *Lighting equipment, Hydrogen, *Electrolysis, Water.

Contents:
Delays in construction caused by defective reverse starters, by A. Zhurzherov
Production of quality control instruments at "Kontrol'pribor", by N. Kiyanov
Industrial achievement at Podol'sk cable plant
Manufacture of microclimate regulator at Gomel' "Elektroapparatur" plant
Poor quality television sets produced at Minsk radio plant
Transmission of chromatic images by new experimental device
New production line at Ust'-Kamenogorsk plant
Criticism of management practices at the Minsk radio plant, by M. Dmitrienko
Development of production at Sumi electric microscope and electrical automatic equipment plant
The new "Minsk-2" refrigerator
The RVVT-M6 remote control device
Production at first watch plant
Advertisement for amplification services
Planned increase and diversification of production of lighting fixtures, by A. Presnyakov
New oxygen-hydrogen station at Erevan electric bulb plant.

WELDING: [SELECTED TRANSLATIONS]. 18 June 63 [24]p. 13 refs. JPRS: 19715.
Order from OTS $0.75 63-31058

Trans. of #Svarochnoe Proizvodstvo (USSR) 1963, no. 4, p. 19-21, 28-31.

DESCRIPTORS: *Welding, *Welds, Quality control, X rays, *Radiography, Television equipment, Aluminum, Titanium, Steel, Diffusion, Controlled atmospheres, Vacuum apparatus, Metals, Cermets, Pipes, *Corrosion

Contents:
Mechanization of the processes of X-ray control of welded joints, by S. T. Nazarov
Diffusion welding in a vacuum and controlled atmosphere, by I. V. Afanas'ev and others
Corrosion resistance of welded pipe joints of pipes made of 1kh18n9t steel, by Yu. V. Rybakov

Belyaev, L. M., Dobrzhanskii, O. F., and Bagdasarov, Kh. S.
METHOD OF OBTAINING MONOCRYSTALLINE DISKS OF LARGER DIAMETER. 23 Apr 63 [4]p. FTD-TT-63-63.
Order from OTS or SLA $1.10 63-19418

Unedited rough draft trans. of Russian patent 147,57o, 1961, appl. no. 736,971/23, 3 July 61.

DESCRIPTORS: *Disks, Crystal growth, *Material forming, Manufacturing methods, Single crystals.

The invention involves a method of obtaining monocrystalline disks of larger diameter, distinguished by the fact, that for the purpose of increasing the economy and simplify the technology of the process, and also to improve the quality of disks on account of reducing the magnitudes of residual stresses, the obtainment of each of the monocrystalline disks is realized by direct growing of same from a melt with the aid of cylindrical primer of given thickness, secured in a horizontally situated holder, continuously revolving around its axis in the process of monocrystal growth on account of continuous lowering the crucible with melt at the rate of growth. (Author)

Dovnar, S. A.
ON THE FEASIBILITY OF THE ANODE-JET METHOD OF PROCESSING METALLIC SURFACES. 28 Mar 63 [6]p. 2 refs. FTD-TT-63-49. AD-402 450.
Order from OTS or SLA $1.10 63-19423

Unedited rough draft trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1962, v. 6, no. 8, p. 494-496.

DESCRIPTORS: Metals, *Steel, *Material removal, *Anodes, *Jets, *Abrasive blasting, Abrasives, Electrolytes.

In analyzing the structural formulas of the jet liquid-abrasive processing of metallic surfaces there was revealed a new method of conducting the process. Its essence consists in the constant formation on the surface of the part being processed of an anode film and products of anode solution and their removal by a jet of abrasive electrolyte. In this paper the results on an experimental check of the anode-jet method of processing for the purpose of determining the feasibility of its accomplishment is explained. (Author)

Hukki, R. T.
PRECISION SIZING OF FINELY DIVIDED SOLIDS. [1963] 14p. (figs. refs. omitted).
Order from SLA $1.60 63-16210

Trans. of Aufbereitungs-Technik (West Germany) 1960 [v. 1] no. 12, p. 509-517.

DESCRIPTORS: *Solids, *Particles, *Material separation, *Wire screens, Ores, Separation, Sizing, Classification.

Topics include: Separating sharpness in conventional classifying processes; basic principle of sizing by intermittent settling; the Copper Cliff test; laboratory screening as measuring standard for the separating sharpness of a classifying process; the principle of upside down screening; the development of a new apparatus; and concentration tests on material after screen separation.

Kurkin, S. A.
TECHNOLOGY OF MANUFACTURING VOLUMES (SHELLS), HOUSINGS OF FURNACES, AIR HEATERS AND CEMENT FURNACES. 21 Feb 63 [34]p. FTD-TT-62-1615. AD-400 523.
Order from OTS or SLA $3.60 63-19437

Unedited rough draft trans. of mono. Tekhnologiya Izgotovleniya Svarnykh Konstruktsii, Atlas Chertezhei, n.p., 1962, p. 67-80.

DESCRIPTORS: *Structural shells, Manufacturing methods, Cylindrical bodies, Spheres, Petroleum, *Storage tanks, Design, Construction, Furnaces, Heaters, Cements.

Lecher, Joseph.
PROCESS AND APPARATUS FOR THE FRACTIONIZATION OF PARTICLES OF MATTER. [1963] [8]p.
Order from OTS or SLA $1.10 63-14981

Trans. of French patent 1,146,808, internat'l cl. B 01 j - G 10 k, appl. dated 14 Feb 56, pat. granted 27 May 57, pub. 15 Nov 57 (pat. appl. deposited in Great Britain 14 Feb 55).

DESCRIPTORS: *Utrasonic radiation, *Material separation, Solids, Machines, Fluids, Design.

The invention concerns a process for reducing the dimensions of particles of a solid material; in this process the solid material is subjected to an intense sonic energy in a fractionating machine in which, while being carried along by a fluid, it is introduced into a first stream which it flows in definitely vertical direction towards the bottom, and then is broken up into a second stream enclosing the first and flowing vertically toward the top, and a third stream containing the solid material in which the particles are larger than those contained in the second stream; this third stream encircles the second stream and flows vertically toward the top, the fine particles produced in the third stream being continually delivered into the second stream, from whcih they are extracted to outside the machine. (Author)

Lueg, W. and Krause, U.
MEASUREMENT OF THE ROUGHNESS OF COLD WORKED SURFACES. [1963] 59p. 19 refs.
Order from SLA $5.60 63-16558

Trans. of Stahl und Eisen (West Germany) 1960, v. 80, no. 6, p. 325-336 (Verein Deutscher Eisenhüttenleute (West Germany). [Berichte]-35, 63, and 89.
Another trans. is available from BISI £8 5s as BISI-1684 [1960].

DESCRIPTORS: *Surface properties, *Cold-working, Surfaces, Measurement, *Meters, Statistical processes, Instrumentation, Rolling mills, Steel.

Topics include: Distribution of roughness on cold rolled and drawn surfaces; specific surface quality factor for the description of a surface; influence of surface testing devices on the measuring result; comparison of several measuring devices of the same and different types; requirements of a surface testing device; and, investigation of the suitability of a photometric surface testing device for determining coefficients of roughness.

Rescheneder, Karl.
METHOD AND APPARATUS FOR PRODUCTION OF SOCKET PIPES MADE OF FIBROUS MATERIALS AND HYDRAULIC BINDING AGENTS, tr. by J. R.-P. 21 Mar 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-19071

Trans. of Austrian patent 167,455, cl. 80b, by Eternit-Werke Ludwig Hatschek, appl. filed 5 Jan 49, pat. term begins 15 June 50, pub. 10 Jan 51.

DESCRIPTORS: *Pipes, *Fibers, *Binders, Material forming, Presses (Machinery), Production.

Schaal, Walter.
ARRANGEMENT FOR METALLIZING CONTINUOUS BANDS BY DEPOSITION OF METALLIC VAPOR IN VACUO, tr. by J. B. 5 Mar 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19062

Trans. of German patent 747,257, cl. 48b, gr. 11/03, by Robert Bosch G.m.b.H., pat. from 5 Mar 43, granted 27 Jan 44, pub. 18 Sep 44.

DESCRIPTORS: *Metal coatings, *Vapor plating, *Paper, Manufacturing methods, Nozzles.

Yakovlev, D. G. and Nudel'man, O. E.
READJUSTABLE AUTOMATIC LINES FOR MODERNIZED MACHINES FOR THE PRODUCTION OF TAPS. 28 Mar 63 [7]p. FTD-TT-63-45. AD-402 448
Order from OTS or SLA $1.10 63-19481

Unedited rough draft trans. of mono. Perenalazhivaemye Avtomaticheskie Linii - Iz Modernizirannykh Universal'nykh Stankov dlya Izgotovleniya Metchikov, n.p., 1962, p. 221-223.

DESCRIPTORS: Industrial production, *Taps, *Industrial equipment, Automatic, Economics, Machining.

Contents:
Automatic line for making taps of the diameter of 9 to 16 mm
Automatic line for making taps of the diameter of from 18 to 24 mm
Basic industrial-economic indices of automatic lines of modern universal machines.

Transport, Traction and Hoist Facilities

SOVIET LITERATURE ON PROTECTIVE STRUCTURES AND COMPONENTS. Quarterly rept. no. 6, 17 July-28 Sep 62, on Ground Support Equipment. AID rept. 62-198; AD-297 356.
Order from OTS or SLA $7.60 63-19451

DESCRIPTORS: *Transportation, Maps, Roads, Vehicles, Axle shafts, Railroads, *Ground support equipment, *Climatology, Meteorological charts, Snow.

Contents:
Transport
Launch site
Natural environmental conditions.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 34. 24 June 63. JPRS: 19819.
Order from OTS $0.75 63-31101

Trans. of Mashinostroitel' (USSR) 1963, no. 3, p. 10 and 16 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Automotive industry, Cargo vehicles, *Passenger vehicles, Automation, Machine tools, *Transmission gears, Industrial plants, Construction, Tractors, Snow vehicles, Personnel management, *Bearings, *Rectifiers, Semiconductor devices, Generators, *Towing vehicles, Trailers.

Contents:
MMZ-554B developed by two plants
"Transformation" of the L'vov autobus
Pavlov plant to produce PAZ-652-B autobus
The LIAZ-677 autobus
With the trademark "ZIL" - USSR
The motor vehicle -- "Yunost"
An automatic assembly line in a cycle plant
Report on the Minsk motor vehicle plant, by Ya. Glezer
Gor'kii production of GAZ trucks
Plant expansion sought, by V. Sorokin
Transportation means needed for northern regions
Miscellaneous want ads
First bearing plant must get rolling
Chief technologist noted
Additional life for the Moskvich-403
Semi-conductive rectifier generator developed
The MAZ family grows.

Andrianov, A. S.
HOW THE KUIBYSHEV RAILROAD ORGANIZED ITS FIGHT AGAINST SNOW. [1963] [6]p.
Order from OTS or SLA $1.10 63-14728

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 12] p. 51-53.

DESCRIPTORS: Railroads, *Snow, *Railroad tracks, Forestry, Shelters, Traffic, Maintenance equipment, *Snow removal.

Bagirov, A. M.
NEW ORGANIZATIONAL METHODS OF FREIGHT HANDLING ON AZERBAYDZHAN LINE. [1962] 5p.
Order from OTS or SLA $1.10 63-10759

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 9] p. 59-63.

DESCRIPTORS: *Railroads, Handling, Railroad cars, Management engineering, *Cargo.

Kholin, I. I. and Kobrin, M. G.
EFFICIENT METHODS OF CEMENT TRANSPORTATION. [1963] 3p.
Order from OTS or SLA $1.10 63-14002

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 11] p. 64-66.

DESCRIPTORS: *Cements, *Transportation, Cargo vehicles, *Railroad cars, Railroads, Economics.

Krapivin, A. F. Mukhamedov, G. A., and Kravtsov, S. D.
INNOVATIONS IN A MARSHALLING YARD. [1963] [3]p.
Order from OTS or SLA $1.10 63-14747

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 11] p. 77-78.

DESCRIPTORS: *Railroads, Railroad cars, *Traffic, Management engineering.

Maruhn, Herbert.
MOTOR VEHICLE SPRING SUSPENSION, tr. by J. R-P. 19 Apr 63, 10p. (figs. omitted).
Order from OTS or SLA $1.10 63-19273

Trans. of German patent 756,117, cl. 63c, gr. 38/03, pat. from 17 Sep 32, grant announced 6 Aug 53, pub. 18 Jan 54.

DESCRIPTORS: Vehicles, *Springs, *Vehicle chassis components, Vehicle wheels, Design.

The invention concerns a spring suspension for motor vehicles whereby the wheels which are independently steered by means of tie-rods transverse to the direction of travel are spring-mounted by means of friction free springs arranged between the said tierods and the chassis, which springs act independently upon the respective wheels. The object of the invention is to add an additional friction free spring to the wheels thus steered and spring suspended. The additional spring acts from one of the paired wheels upon the other, to afford an independent spring action. A further object of the invention is so to arrange the tierods and springs that a compact and reliable axle construction that is little subject to vibration can be attained. As a front axle, this construction especially improves the road characteristics of the vehicle. (Author)

Reitlinger, Benno.
INNOVATION IN CABLEWAYS, tr. by J. B. 22 Apr 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19271

Trans. of German patent 27,923, cl. 81, patented from 28 Oct 1883, pub. 22 July 1884.

DESCRIPTORS: *Conveyors, Cables (Mechanical), Design.

Senderov, G. K.
HOW TO AVOID CAR DAMAGE ON CAR-TIPPER. [1963] 6p.
Order from OTS or SLA $1.10 63-14724

Trans. of Zheleznodorozhnyi Transport (USSR) 1962, [v. 44, no. 11] p. 66-68.

DESCRIPTORS: *Railroad cars, *Damage, Handling.

Smorodinov, M. A. and Lazarev, H. M.
SHORT-HAUL TRANSPORT: FOR TRUCKS. [1963] [5]p.
Order from OTS or SLA $1.10 63-14726

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 11] p. 47-49.

DESCRIPTORS: *Cargo vehicles, Railroads, Cargo, *Transportation, Economics, Roads.

Tikhomirov, I. G., Nevzorov, A. V. and others.
AUTOMATION OF OPERATIONAL PROCEDURES IN MARSHALLING YARDS. [1963] [8]p.
Order from OTS or SLA $1.10 63-14005

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 5] p. 50-54.

DESCRIPTORS: *Railroads, *Railroad cars, Automation, Computers, *Control systems, Handling, Logistics, Operations research.

MATERIALS

Engler, H. and Vinkeloe, R.
THE ADVANTAGE OF LOW CONCRETE TEMPERATURE. [1963] 15p. 22 refs.
Order from SLA $1.60 63-14708

Trans. of Beton Herstellung Verwendung (West Germany) 1962, v. 12, no. 11, p. 496-500.

DESCRIPTORS: *Concrete, Temperature, Thermal stresses, Mechanical properties, Quality control.

Strong heat development in concrete during setting and hardening can lead to thermal damage. Causes of high-temperature in concrete are analyzed. The cited results of temperature measurements in concrete of structural members should make it possible to

estimate the expected temperature rise in concrete in various structural elements. Fresh (young) concrete is particularly vulnerable to cracking. It not only has a relatively low strength, but is also considerably more brittle than at later ages. A measure of crack danger aside from the thermal stress in the concrete can be the "brittleness factor K". Measures for moderation of thermal stresses in concrete are described. (Author)

Flemming, H.
RAILROAD TIE OR OTHER CONCRETE ARTICLE PRODUCED FROM CEMENT AND INORGANIC FIBERS WHICH IS SUBJECT TO A STATIC OR DYNAMIC LOAD. [1963].
Order from TTIS $12.00 TTIS NS-99

Trans. of East German patent 24,547, appl. 27 May 59, pub. 3 Jan 63.

DESCRIPTORS: *Concrete, Cements, Fibers, Inorganic substances, Fillers, *Loading (Mechanics), Foundations (Structures), Railroad tracks, *Structural parts.

Hlousek, M.
DETERMINATION OF THE DIAMETER OF LATEX PARTICLES OF ANY SIZE BY OPTICAL DENSITY MEASUREMENTS. [1963] 9p.
Order from ATS $13.00 ATS-37Q69C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1962, v. 12(37) no. 12, p. 681-685.

DESCRIPTORS: *Particle size, Optical properties, Density, Determination.

Kalil, James.
METHOD FOR THE PREPARATION OF SELF-SUPPORTING POROUS FILMS FROM CHLORO-SULFONATED ETHYLENE POLYMERS. [1962] 6p.
Order from OTS or SLA $1.10 63-10885

Trans. of German patent appl. (DAS) 1,136,098, P 17,973 X/39 a^3, filed 15 Feb 57, pub. 6 Sep 62, cl. 39 a^3 27/00, internat. cl. B 29 d, by E. I. du Pont de Nmours and Co. (U. S. priority, 17 Feb 56).

DESCRIPTORS: *Plastic films, Porous materials, Chlorine, *Ethylenes, Polymers, Carbon tetrachloride, Sulfur compounds, Dioxides, Solutions, Manufacturing methods, Elastomers.

Kuhl, H.
EXPANSIVE CEMENT (QUELLZEMENT). [1963] 7p. 22 refs.
Order from SLA $1.10 63-14710

Trans. of Silikat Technik (East Germany) 1955, v. 6, no. 11, p. 476-477.

DESCRIPTORS: *Cements, *Structural properties, Production, Civil engineering.

A review is given of the development and present-day status of the use of expansive cements.

Loncin, M.
THE SOLUBILITY OF WATER IN FATS AND OILS AND THE VAPOR PRESSURE OF THE DISSOLVED WATER. [1963] 7p. 8 refs.
Order from SLA $1.10 63-14892

Trans. of [Fette und Seifen Anstrichmittel] (West Germany) 1955, v. 57, no. 6, p. 413-415.

DESCRIPTORS: *Water, Solubility, *Fats, *Oils, *Fatty acids, *Vapor pressure, Vegetable oils, Catalysis.

Markov, A. L. and Volosevich, F. P.
METHODS OF MEASURING ROUGHNESS OF A WORKED SURFACE. 1 Mar 63 [18]p. FTD-TT-62-1757.
Order from OTS or SLA $1.60 63-19168

Unedited rough draft trans. of mono. Kratkii Spravochnik Kontrol'nogo Mastera Mashinostroitel'nogo Zavoda, Leningrad, 1961, chap. 11, p. 206-218.

DESCRIPTORS: *Machining, *Quality control, Materials, Surface properties, Measurement, *Microscopes, Design, Operation.

Adhesives and Sealants

Busch, Heinz.
A NEW FORM MATERIAL BINDER. [1963] 14p. (figs. omitted) 1 ref.
Order from SLA $1.60 63-14637

Trans. of Giesserei (West Germany) 1955, v. 42, no. 8, p. 187-191.

DESCRIPTORS: *Binders, *Plastics, Oils, *Molding, Sand, Casting, Foundries, Mechanical properties, Economics, Steel, Castings, Adhesives, Material forming.

With the development of solidification oils on artificial resin base in the grades No. 1, 2 and 3 an attempt was made to combine the good properties of the solidification oils with those of the artificial resins and to employ them in steel foundries. The experiments achieved the goal of mass producing finished cores with a good original stability. Also this forming material can be blown and is sufficiently plastic to be formed in every model just like an ordinary natural sand. Since the wettability of these solidification sands on artificial resin bases is good, casts are obtained with a smooth surface. Also these sands cause a good fluidity so that very difficult and dull steels can be cast without danger. (Author)

Tadenuma, Hachiro.
EFFECTIVE COMPONENTS AS BINDING MATERIALS FOR CARBON POWDER IN COAL TAR PITCH. [1963] [12]p. (table fig. omitted).
Order from SLA $1.60 63-10926

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1953, v. 56, p. 516-519.

DESCRIPTORS: *Pitch (Materials), Tar, Carbon, Powders, *Adhesives.

Voyutskii, S. S., Gul', V. E. and others.
ADHESION OF VARIOUS ELASTOMERS TO SILICATE GLASS. Pt. 1 of Adhesions of Polymers to Silicate Glass (Adgeziya Polimerov k Silikatonomu Steklu. I. Adgeziya k Silikatnomu Steklu Razlichnykh Elastomerov). [1963] [36]p. (foreign text included) 24 refs.
Order from OTS or SLA $3.60 63-14068

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 2, p. 285-293.
Another trans. is available from OTS or SLA $1.10 as 62-20432 [1962] [10]p.

DESCRIPTORS: *Elastomers, *Adhesion, Polymers, Silicates, Glass.

For abstract see Technical Translations 9: 737, 1963. (See also 62-34191)

Ceramics and Refractories

Bigot, A.
THE CRYSTALLIZATION OF GLASSES [AND] PAVING WITH BASIC CRYSTALLIZED GLASSES (la Cristallisation des Verres [and] Pavages en Verres Basiques Cristallisés). [1963] [35]p. (foreign text included) 1 ref.
Order from SLA $3.60 63-14044

Trans. of Revue Universelle des Mines (France) 1925, ser. 7, v. 5, no. 5, p. 246-257.

DESCRIPTORS: *Glass, Crystallization, Pavements, Mechanical properties.

Costa, Harold.
HEAT FLOW FROM THE FLAME TO THE GLASS MELT INVESTIGATED ON A TRIAL INSTALLATION. [1963] 27p. (figs. omitted) 21 refs.
Order from SLA $2.60 63-14063

Trans. of Silikat Technik (East Germany) 1955, v. 6, no. 10, p. 415-422.

DESCRIPTORS: *Glass, *Heat transfer, Furnaces, Fuels, Gases, Melting, Flames.

The first results of comparative investigations of the heat transfer in the glass bath with luminous and roaring flames from unpurified and purified generator gas in a bath depth of 24 cm show only in the top layer of 1 cm a temperature drop which is greater by 70%. Below this layer of 1 cm the temperature course and the mean effective heat conductivity are independent of the tar content of the gas and thus of the degree of blackening of the flame. The bottom loss is higher by 3.7% in the roaring flame. For the same glass bath temperature, the flame temperature must be by 5.2% higher. On the basis of these first results it can be said that the use of pure gas is of advantage for the heat transfer.

Czerny, Marianus and Genzel, Ludwig.
ON THE CALCULATION OF THE RADIATION CURRENT IN THE GLASS BATH OF MELTING TROUGHS (Zur Berechnung des Strahlungsstromes in Glasbad von Schmelzwannen). [1963] [26]p. (foreign text included) 24 refs.
Order from SLA $2.60 63-14047

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 1, p. 1-7.

DESCRIPTORS: *Glass, *Furnaces, Melting, *Thermal radiation, Mathematical analysis.

A relatively simple formula is given which permits calculating the magnitude of the radiation current when the surface and floor temperature of the glass bath are given and the optical constants of the glass are known. The formula is tested for its reliability by comparison with calculated results of the Institute of Practical Mathematics in Darmstadt, which were obtained using stricter formulas. (Author)

Evseev, G.
THAT'S GLASS FOR YOU! 19 Apr 63 [3]p. FTD-TT-63-272.
Order from OTS or SLA $1.10 63-19421

Unedited rough draft trans. from Sovetskaya Rossiya (USSR) 1962, 25 Jan, p. 4.

DESCRIPTORS: *Glass, Physical properties.

In the Saratov branch of the All-Union Scientific-Research Glass Institute there was developed a highly effective method for increasing the strength of glass. I saw how with a balancing weight weighing nearly one kilo they knocked against a sheet of glass and it remained whole. A. Shabanov, scientific worker in the Institute, drove a nail into the glass--and nothing happened--the nail went through without forming even the radial cracks. Now industry is using stalinite, a strong glass. It does not break, but on an impact give a great number of tiny cracks, and it is practically no longer usable. The new material is also valuable for the fact that it withstands any impacts. It is finding extensive use in river and ocean vessel construction, in instrument making, and in the automobile and other branches of industry. The scientific workers of the Institute, under the direction of L. Kulesheva, are perfecting the technology of the making of the unbreakable glass, in order to soon have mass production of it. (Report quoted in its entirety)

Garchey, Louis Antoine.
A PROCESS FOR MANUFACTURING OBJECTS FROM DEVITRIFIED GLASS (Verfahren zur Herstellung von Gegenständen aus Entglastem Glase). [1963] [5]p. (foreign text included).
Order from OTS or SLA $1.10 63-14050

Trans. of German patent 91, 203, cl. 32: Glass, originated 21 Mar 1896, issued 24 Feb 1897.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-16857 [1960] 3p.

DESCRIPTORS: *Glass, Molding, Heat treatment, Structural properties, Processing.

Goldstein, H.
RECUPERATION AT GLASS FURNACES BY AID OF A RADIATION RECUPERATOR OF THE TUBULAR TYPE (Rekuperation vid Glasugnar Med Stralningsrekuperator av Rörtyp). [1963] [25]p. (foreign text included).
Order from SLA $2.60 63-14051

Trans. of Glasteknisk Tidskrift (Sweden) 1960, v. 15, no. 3, p. 63-68.

DESCRIPTORS: *Glass, *Furnaces, Heat exchangers, Thermal radiating, Operation.

Greschat, Karl Hans.
THE HEATING UP OF GLASS MELTING TANKS (Über das Antempern von Glasschmelzwannen). [1963] [22]p. 10 refs.
Order from SLA $2.60 63-14058

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 10, p. 370-376.

DESCRIPTORS: *Glass, *Furnaces, Heating, Design, Thermal insulation.

The forces and movements occurring during the heating up of glass melting furnaces have to be taken into account in the construction of these furnaces and especially in the development of the binding steel. In this respect several suggestions are made on the design. In addition to that, data was recently able to be collected on the improved control of the heat-up process which permit the heat-up time to be shortened within certain limits. The necessary equipment and precautions are described. (Author)

Günther, Rudolf.
SIGNIFICANCE OF THE HEAT BALANCE OF TANK FURNACES (Bedeutung der Wärmebilanz von Wannenöfen). [1963] [22]p. (foreign text included) 2 refs.
Order from SLA $2.60 63-14059

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1954, v. 27, no. 2, p. 41-46.

DESCRIPTORS: *Furnaces, Heat, *Thermodynamics, *Glass.

Jebsen-Marwedel, H. and Dinger, K.
TEMPERATURE OF EQUILIBRIUM OF THE GAS CONTENT OF DIFFERENT MOLTEN GLASSES, AS A CRITERION OF REFINING (La Température d'Equilibre de la Teneur en Gaz de Différents Verres en Fusion, comme Critérium de l'Affinage). [1963] [18]p. (foreign text included) 4 refs.
Order from SLA $1.60 63-14024

Trans. of Verres et Refractaires (France) 1947 [v. 1] Aug, p. 19-25.

DESCRIPTORS: *Glass, Temperature, Gases, Bubbles, *Thermodynamics.

The temperature at which the equilibrium of the gases which it contains begins to be broken varies considerably from one type of glass to another. It undoubtedly depends on the quantity of heat brought to the molten mass (as far as can be estimated in the absence of precise bases), but also on the composition (viscosity). In any case, this temperature is usually lower by 100 deg C and more than that to which the glass was exposed. Industrially, therefore, the equilibrium is approached only approximately. The characteristic behavior of the different glasses can, moreover, be interpreted in a satisfactory manner. The experimental measurements made enable the affirmation that, within the limits of the experiment, 1 deg C and 0.21 to 0.46 mm of Hg, or 1 mm of Hg and 2.2 to 4.7 deg C have an equivalent influence on the evolution of the gases in the form of bubbles. (Author)

Jebsen-Marwedel, Hans.
THREADS IN GLASS: A RESULT OF DYNACTIVE BEHAVIOR OF STRIATIONS (STREAKS) ("Faden" im Glas--eine Folge "Dynaktiven" Verhaltens von Schlieren). lecture at the Glass-[Technology Meeting] (no. 30) Tubingen, 16 May 56; Communication [no.] 68 Relating to Glass-Technical Manufacturing Errors. [1963] [30]p. (foreign text included) 11 refs.
Order from SLA $2.60 63-14025

Trans. of Glastechnische Berichte (West Germany) 1956, v. 29, no. 7, p. 269-275.

DESCRIPTORS: *Glass, Smelting, Fibers, Hydrodynamics, Liquids, Tests, Surface tension, Deformation.

From two areas of a pair of liquids of a smelt which adjoin each other at the surface, the one of the greater surface tension will be subject to a streaking of the other; absorbs its substance by capillary action, and in this way becomes especially "non-homogeneous in itself". The reproduction of such processes in model pairs of liquids is rich in revelations from the congruity of its course. The size relations are in agreement. The conditions of dynactive pairs of liquids frequently are fulfilled in and by the technical smelting of glass. They may take place by partial concentration of SiO_2 or by solution of alumina from fireproof material. The strong influence of SO_3 upon the surface tension also may easily cause dynactivity. The surfaces of a glass-technical product may be subject to the effect of processes that already manifest themselves in the smelting surface as a consequence of molecular forces. (Author)

Knapp, Oscar.
THE SUPERVISION OF THE ANNEALING OF PLATE GLASS. [1963] 6p. (figs. omitted).
Order from SLA $1.10 63-14389

Trans. from Keramische Rundschau [und Kunstkeramik] (Germany) 1932, no. 16.

DESCRIPTORS: *Annealing, *Glass, Sheets, Colors, *Quality control.

The inspection of the annealing of plate glass can be done by cutting a plate from an annealed sheet and determining the strains from the sample. If the sample shows an unfavorable result, the annealing time and temperatures must be adjusted in such a way that the strains in the sample fall within the limit. After the lehr is adjusted right, the annealed glasses must be inspected continually. It is sufficient to cut a piece

from the edge of the sheet. The inspection of the annealing does not consist in the examination of all sheets but in the inspection of the annealing effect. (Author)

Kristiansen, A.
HEAT TECHNOLOGICAL PROBLEMS IN THE UNIT MELTER (Värmetekniska Fragor Beträffande Unit Meltern). [1963] [24]p. (foreign text included).
Order from SLA $2.60 63-14026

Trans. of Glasteknisk Tidskrift (Sweden) 1960, v. 15, no. 5, p. 133-139.

DESCRIPTORS: *Glass, *Furnaces, Melting, *Thermodynamics, Economics, Fuel consumption.

Lienert, Hermann.
TANK COOLING (Wannenkühlung). [1963] [10]p. (foreign text included).
Order from SLA $1.10 63-14074

Trans. of Silikat Technik (East Germany) 1961, v. 12, no. 5, p. 218-219.

DESCRIPTORS: *Glass, Furnaces, Industrial equipment, Cooling, *Blowers, Economics.

Metzger, K.
OLD AND NEW LEHRS FOR HOLLOW GLASS. [1963] 23p. (figs. omitted).
Order from SLA $2.60 63-14505

Trans. of Glastechnische Berichte (Germany) 1932, v. 10 [no. 8] p. 411-420.

DESCRIPTORS: *Glass, *Furnaces, Annealing, Design, Operation, Fuel consumption.

Pieper.
IMPROVEMENTS IN TREATMENT APPLIED TO VALCAIN GLASS. [1963] [8]p.
Order from OTS or SLA $1.10 63-14501

Trans. of French patent 107,512, 1875.

DESCRIPTORS: *Glass, Heat treatment, Cooling, Coolants.

Popescu-Has, D[umitru] and Lungu, St[elian N].
CERAMIC MASSES OBTAINED BY THE CRYSTALLIZATION OF SILICATE MELTS (Mase Ceramice Obtinute prin Cristalizarea Topiturilor de Silicat). [1963] [9]p. (foreign text included).
Order from SLA $1.10 63-14072

Trans. of Industria Usoara (Rumania) 1954, v. 1, p. 26-27.

DESCRIPTORS: *Ceramic materials, Melting, *Silicates, Crystallization, Fluorides, Nucleation, Production, Crystal structure.

After an outline of the technical- economical conditions of the production of ceramic masses by the crystallization of silicate melts, an outline is given of two methods to obtain ceramic masses of a finely grained structure by aid of the crystallization of melts. (Author)

Sawai, Ikutaro; Kunugi, Masanaga, and others.
STUDIES ON THE CHARACTERISTICS OF CONVECTION CURRENT OF MOLTEN GLASS BY MEANS OF MODEL TECHNIQUES. [1963] [36]p. (foreign text included) 7 refs.
Order from SLA $3.60 63-14073

Trans. of Yogyo Kyokaishi (Japan) 1959, v. 67, p. 301-311.

DESCRIPTORS: *Glass, *Furnaces, *Thermodynamics, Fluid flow, Heat transfer, Simulation, Model tests.

The authors carried out a series of model experiments using glycerin in place of the molten glass. From the results obtained they pointed out some important characteristics of the convection current. Some of them are: (1) The change of heat input causes the proportional change of temperature gradients both in vertical and horizontal directions as well as the amount of heat discharged from unit surface area of side and bottom walls, but it has not so much effect on the flow velocity of convection current. (2) Increase of heat input indicates a tendency to shift upward the circulating current and consequently the fluid near the bottom remains stagnant. These tendencies were also observed when the viscosity of fluid was decreased and when the heaters concentrated at the center of the vessel. (3) Decreases of the overall heat transfer coefficient of wall depth of the fluid and increase of viscosity of the fluid result in a reduction in the velocity of convection current. Generally it could be pointed out that the change of the flow velocity is not so large as one would expect at first. This may be regarded as self-controlling effect of the convection current.

Shimada, Hachiro.
EXPERIMENTAL INVESTIGATIONS OF BUBBLE AND FLAME-FORMATION IN ELECTRICALLY HEATED MODEL GLASS TANKS (Experimentelle Untersuchungen der Blasen- und Flammenentstehung in Elektrisch Beheizten Modellglaswannen). [1963] [19]p. (foreign text included) 23 refs.
Order from SLA $1.60 63-14065

Trans. of Glastechnische Ber[ichte] (West Germany) 1956, v. 29, no. 3, p. 78-83.

DESCRIPTORS: *Glass, Electric furnaces, Melting, Bubbles, Electrodes, Flames, Electric currents, Temperature.

In electrically heated glass tank bubbles appear on the surface of the electrode and lead to flames on the surface of the glass melt. For the formation of these bubbles the electric current density on the surface of the electrode, the material of the electrodes, the type of glass and the temperature of the glass melt are of importance. A few examples and principles of experimental observations are reported here which can serve as practical indications of the operation of electric melting furnaces. (Author)

Unger, Leopold.
THE USE OF RADIOACTIVE ISOTOPE FOR FLOW INVESTIGATIONS IN GLASS MELTING TROUGHS (Anwendung Radioaktiver Isotope zu Strömungsuntersuchungen in Glasschmelzwannen). Lecture at Glastechnical Convention (no. 34) Berlin, 4 May 60. [1963] [17]p. (foreign text included) 5 refs.
Order from SLA $1.60 63-14066

Trans. of Glastechnische Ber[ichte] (West Germany) 1960, v. 33, no. 11, p. 416-421.

DESCRIPTORS: *Glass, *Radioactive isotopes, Melting, Fluid flow, Test equipment, Industrial equipment.

Flow investigations on glass melting troughs with radioactive substances are described. The advantages of this procedure consist in that the demonstration of the radioactive material is very sensitive, the measurement results can be evaluated rapidly and no preparations which are detrimental to the production are needed. The measuring arrangements used, the course of the experiment and the evaluation of the measured data are described in detail. Sodium 24 as Na_2CO_3 and scandium 46 fused with quartz were used for the measurements. The passage times of the glass from the loading of the frit up to the machine and the flow pictures in transverse and U-flame troughs are determined. (Author)

Watzek, Otto and Hübscher, Martin.
PROGRESS IN THE QUALITATIVE AND QUANTITATIVE CHEMICAL ANALYSIS OF GLASS DEFECTS (Fortschritte in der Qualitativen und Quantitativen Chemischen Analyse von Glasfehlern). [1963] [7]p. (foreign text included) 8 refs.
Order from SLA $1.10 63-14067

Trans. of Silikat Technik (East Germany) 1959, v. 10, no. 11, p. 537-538.

DESCRIPTORS: *Glass, Chemical analysis, Impurities, Test methods.

Zschacke.
MUFFLE OR OPEN-FIRE LEHRS. Nov 37, 9p. (figs. omitted).
Order from SLA $1.10 63-14504

Trans. of Glashütte (Germany) 1937, v. 67, p. 549-552.

DESCRIPTORS: *Furnaces, *Glass, *Annealing, Surfaces, Gases, Chemical precipitation, Sodium compounds, Sulfates, Carbonates, Processing.

Fuels, Lubricants, and Hydraulic Fluids

Afanas'ev, V. M.
PIPELINE CALCULATIONS FOR PUMPING OILS AND GAS MIXTURES. [1963] 8p.
Order from ATS $12.25 ATS-53Q69R

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1962, v. 40, no. 11, p. 56-60.

DESCRIPTORS: *Pipelines, Oils, Gases, Mixtures.

Anpilogov, A. P.
THE PROBLEM OF ESTIMATING RESIDUAL OIL SATURATION IN FLOODED RESERVOIRS. [1963] 3p.
Order from ATS $4.50 ATS-17Q70R

Trans. of Razvedochn[aya] i Promysl[ovaya] Geofiz[ika] (USSR) 1962, v. 43, p. 118-120.

DESCRIPTORS: *Mining engineering, Geology, Oils, *Petroleum.

Davydov, P. I., Bol'shakov, G. F., and Glebovskaya, E. A.
A STUDY OF THE EFFECT OF NITROGEN BASES ON THE STABILITY OF FUELS AT ELEVATED TEMPERATURES. [1963] 8p.
Order from ATS $9.65 ATS-37Q68R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 10, p. 20-26.

DESCRIPTORS: *Fuels, Stability, Nitrogen, High temperature research

Fischer, Franz and Koch, Herbert.
CONCERNING THE SYNTHESIS OF LUBRICATING OILS FROM SYNTHETIC PETROLEUM PRODUCED FROM HYDROGEN AND CARBON MONOXIDE: PRELIMINARY DISCUSSION. [1963] 15p.
Order from SLA $1.60 63-14227

Trans. of Brennstoff-Chemie (Germany) 1933, v. 14, p. 463-468.

DESCRIPTORS: *Lubricants, Oils, Synthesis (Chemistry), Petroleum, *Hydrogen, *Carbon compounds, *Monoxides, Benzenes, Chlorination, Hydrogenation, Catalysis, Chemical engineering.

Loroue, D. and Paul, G.
RAPID METHOD FOR THE DETERMINATION OF LOW CONCENTRATIONS OF $Pb(C_2H_5)_4$ IN FUELS. [1963] 11p.
Order from ATS $9.75 ATS-78Q69F

Trans. of Assoc[iation] Franc[aise des] Techniciens [du] Pétrole. Bull[etin] 1963, no. 157, p. 127-138.

DESCRIPTORS: *Quantitative analysis, *Lead compounds, *Ethyl radicals, *Fuels.

Raushenbakh, B. V.
VIBRATIONAL COMBUSTION. 16 Apr 63 [525]p. 13 refs. FTD-TT-62-942. AD-402 909
Order from OTS or SLA $26.00 63-19414

Unedited rough draft trans. of mono. Vibratsionnoe Gorenie, Moscow, 1961, 500p.

DESCRIPTORS: *Combustion, *Vibration, *Oscillation, Excitation, Rocket motors (Liquid propellant), Jet engines, Gases, Gas flow, Propagation, Perturbation theory, Sound, Acoustics, Jet acoustic oscillations, Stability, Theory, Feedback oscillators, Mathematical analysis, Oscillators, Control systems.

Contents:
Foreword
Introduction
General description of oscillations excited by heat supply
Propagation of perturbations in a moving gas
Sources of self-oscillation energy
Theoretical idealization of the processes in the combustion zone
Excitation of oscillations by heat supply in the absence of losses
Excitation of oscillations by heat supply in the presence of losses at the ends of the tube
Feedback mechanism in the excitation of acoustic oscillations by combustion
Calculation of self-oscillations taking into account the nonlinear properties of the heat-supply zone
Vibration combustion
Certain particular cases of self-excitation of acoustic oscillations.

Seregin, A. V.
LIQUID ROCKET PROPELLANTS. 23 Apr 63 [115]p.
FTD-TT-63-98; AD-405 726.
Order from OTS or SLA $9.60 63-19535

Unedited rough draft trans. of mono. Zhidkie Raketnye Topliva, Moscow, 1962, 92p.

DESCRIPTORS: *Liquid rocket propellants, Rocket motors (Liquid propellant), Fuel systems, *Liquid rocket oxidizers, Oxygen, Nitric acid, Hydrogen compound, Peroxides, Hydrocarbons, Alcohols, Amines, Hydrazines, Boron compounds, Hydrides, Free radicals, Fluorine, Ozone, Chlorine, Methanes, Nitric radicals.

The book, compiled from data of the foreign literature, describes the basic properties of liquid rocket propellants and the characteristics of their application chiefly in liquid propellant engines. The book is designed for master-sergeants, sergeants and privates of the armed forces, as well as civilians interested in the problems of rocket technology. (Author)

Leather and Textiles

Bernskiold, Arnold.
STREAKING IN NYLON FABRICS. [1963] 13p.
Order from SLA $1.60 63-14497

Trans. of Rayonne et Fibres Synthetiques (Belgium) 1962 [v. 18] June, p. 635-640.

DESCRIPTORS: *Nylon, *Fibers (Synthetic), Textiles, *Dyeing, *Dyes, Absorption, Chemical properties, Acids, Molecular association, Amides, Physical properties, Classification, Polyamide plastics.

Fuchino, Keiroku.
X-RAY STUDY OF POLY(VINYL ALCOHOL). [1962] 7p. (figs. omitted).
Order from SLA $1.10 62-18947

Trans. of [Kyoto Daigaku] Nippon Kagaku Sen-i Kenkyusho [Koenshu] (Japan) 1941, v. 6, p. 267-270.

DESCRIPTORS: *Polyvinyl alcohol, Heat treatment, *Fibers (Synthetic), X rays, Crystal structure.

X-ray studies of various types of polyvinyl alcohol are briefly discussed, and the relationship between the heat-treatment of poly(vinyl alcohol) fiber and the X-ray diagram is examined at some length. (Author)

Gasser, A.
SIZING MACHINES TO MEASURE. [1961] 9p. (10 figs. omitted).
Order from SLA $1.10 61-14534

Trans. of Spinner und Weber Textilveredlung (West Germany) 1956, v. 74, no. 10/11, p. 455-458.

DESCRIPTORS: Sizing, *Fibers, Textile industry, Measurement, Industrial equipment, Processing.

Hendrix, Hans.
THE EFFECT OF CARRIERS IN THE DYEING OF POLYESTER FIBERS WITH DISPERSE DYESTUFFS, PTS. I-III. [1963] 50p. 50 refs.
Order from SLA $4.60 63-16465

Trans. of Melliand Textilberichte (West Germany) 1961 [v. 42] no. 11, p. 1275-1279; 1962 [v. 43] no. 2, p. 156-164; no. 3, p. 258-265.

DESCRIPTORS: *Dyes, *Surface-active substances, Polyester plastics, *Fibers (Synthetic), Fibers, Dyeing.

Jedryka, Tadeusz and Klopotowski, Wieslaw.
A STUDY OF NEW PRINCIPLES ON THE PRELIMINARY TREATMENT OF COTTON IN THE SPINNING MILL (Rozwazania nad Nowymi Zasdami Wstepnej Obrobki Bawelny w Przedzalni) tr. by B. Scotland. 1962 [36]p. 17 refs. PL-480 Agr.
Order from OTS $0.50 60-21549

Trans. of Politechnika, Lodz. Zeszyty Naukowe (Poland) 1959, no. 27, p. 49-90.

DESCRIPTORS: *Cotton, *Fibers, Processing, Textile industry, Machines, Industrial equipment.

Pierret, S.
RESEARCH PROBLEMS POSED BY THE SIZING OF POLYAMIDE YARNS. [1963] 13p. (figs. refs. omitted).
Order from SLA $1.60 63-10939

Trans. of Teintex (France) 1962, v. 27 [no. 12] p. 873-885.

DESCRIPTORS: *Fibers (Synthetic), *Sizing, *Amides, Abrasion, Meters, Tests, Oils, Acrylic acids, Storage, Polyamide plastics.

Rudoi, B. L.
THE SUIT OF THE COSMONAUT. 28 Feb 63 [4]p.
FTD-TT-63-189; AD-299 858.
Order from OTS or SLA $1.10 63-19701

Unedited rough draft trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnvkh Znanii]. Seriya 4 (USSR) 1963, no. 2, p. 27-28.

DESCRIPTORS: *Protective clothing, *Astronauts, *Aluminum coatings, *Glass textiles, *Heat resistant materials, Radioactivity, Metallurgy, Chemistry.

A nontechnical discussion of protective clothing made of aluminum-coated glass textiles.

Schuster, Curt; Hoffmann, Sigfried, and Gehm, Robert.
MINIMIZING ELECTROSTATIC CHARGE OF UNDYED FIBERS, THREADS AND FILAMENTS. 25 Sep 62, 6p. 2 refs.
Order from OTS or SLA $1.10 63-10797

Trans. of German patent 1,082,004, by Anilin-und Soda-Fabrik Aktiengesellschaft, appl. 19 July 55, appl. pub. and issued 19 May 60.

DESCRIPTORS: *Fibers, *Electrostatics, Static electricity, Protective treatments, Ammonium compounds, *Filaments.

Swatek, Wolfgang.
TAKE-UP AND DRAW-TWISTER MACHINES FOR SYNTHETICS. [1963] 8p.
Order from SLA $1.10 63-16312

Trans. of Chemiefasern (West Germany) 1961 [v. 11] no. 3, p. 166-173.

DESCRIPTORS: *Fibers (Synthetic), Processing, Filaments, Polymers, *Machines, Industrial equipment, Drawing (Machine processing), Textile industry, Stretch forming.

Paints and Finishes

Kraus, A.
ACID CURING NITROCELLULOSE LACQUERS, I. [1963].
Order from TTIS $22.00 TTIS NS-102

Trans. of Farbe und Lack (West Germany) 1963, v. 69 [no. 3] p. 171-174.

DESCRIPTORS: *Varnishes, *Nitrocellulose, *Acids, *Aging (Materials)

Lomakin, V. S. and Savchenko, V. I.
A STUDY OF THE WEAR-RESISTANCE OF ENAMEL COATINGS WITH REFERENCE TO THE LIFE OF MACHINE PARTS. 14 Mar 63 [38]p. 2 refs.
FTD-TT-62-1659. AD-400 525
Order from OTS or SLA $3.60 63-19304

Unedited rough draft trans. of Trenie i Iznos v Mashinakh (USSR) 1960 [v. 14] p. 63-92.

DESCRIPTORS: *Ceramic coatings, Friction, Life expectancy, Machines, Abrasives, Steel, Tests.

A laboratory testing procedure was developed for comparative evaluation of materials during the simultaneous action of moving abrasive particles and an aggressive liquid medium. Comparative tests of various steels and of enamel coatings used in industry, as well as tests of experimental enamel coatings were performed according to this procedure under various test conditions. (Author)

Machu, Willibald.
PROCESS FOR PRODUCTION OF CORROSION PROTECTIVE PHOSPHATE COATINGS ON RUSTED OR SCALY IRON OR STEEL SURFACES AND ZINC OR ZINC ALLOYS, tr. by J. R-P. 10 Apr 63, 10p.
Order from OTS or SLA $1.10 63-19268

Trans. of Austrian patent 168,640, cl. 48b, to Galvapol, Gesellschaft für Galvanotechnik und Oberflächenchemie, and Willibald Machu, appl. filed 23 July 49, term begins 15 Dec 50, pub. 10 July 51.

DESCRIPTORS: *Phosphate coatings, *Corrosion inhibition, Scale, Oxidation, Iron, Steel, Zinc, Zinc alloys, Surfaces, Films, Phosphoric acids, Metallic compounds, Phosphates, Surface-active substances.

The invention concerns a process for the production of corrosion protective phosphate coatings on rusted or scaly iron or steel surfaces and zinc or zinc alloys, characterized in that on these surfaces without preliminary scouring a treating liquid that has a simultaneous rust-removing, descaling and phosphatizing action is applied in a thin layer at ordinary or only slightly elevated temperature, which layer is permitted to dry of its own accord in air, advantageously without further treatment such as washing or artificial drying, whereby the said treating liquid consists of dilute phosphoric acid, metal phosphates, wetting agents and one or more known accelerators for the phosphatizing process, whereby said solution is not however in so-called "hydrolysis equilibrium". (Author)

Reichelt, Walter.
PROCESS FOR METALLIZING PRODUCTS OF POLYETHYLENE. 26 Sep 62 [5]p. 1 ref.
Order from OTS or SLA $1.10 63-10837

Trans. of Germany patent 1,068,971, appl. 24 Nov 55, by W. C. Heraeus, Soc., Ltd., issued 28 Apr 62, appl. pub. and issued 12 Nov 59.

DESCRIPTORS: *Polyethylene plastics, *Metal coatings, Pickling, Phosphoric acids, Zinc compounds, Chromates, Varnishes, Isocyanate plastics, Vacuum apparatus, Evaporation, Elasticity, Adhesion, Aluminum.

Photographic Materials

Belous, V. M.
SOME SPECIAL FEATURES OF PHOTOGRAPHIC EMULSION LUMINESCENCE. [1963] 3p.
Order from ATS $5.50 ATS-64Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prilk[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 5, p. 386-388.

DESCRIPTORS: *Photographic emulsions, Luminescence.

Bogolyubskii, V. A. and Grechko, L. V.
FORMATION OF BLUE DYES IN COLOR FILMS CONTAINING ALKYLHYDROQUINONES. [1963] 3p.
Order from ATS $3.50 ATS-66Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 6, p. 461-462.

DESCRIPTORS: *Color film, *Dyes, Color photography, Alkyl radicals, Quinones.

Bonjour, Georges.
IMPROVEMENTS OF STABILIZING PROCEDURES FOR PHOTOGRAPHIC IMAGES. [1963] 3p.
Order from OTS or SLA $1.10 63-16325

Trans. of French patent 1,233,010, appl. 27 Apr 59, issued 2 May 60, pub. 12 Oct 60, by Société Lumiere.

DESCRIPTORS: *Photographic images, Stabilization, *Photographic emulsions.

Epping, R., Pauckner, L., and Schwab, G.
PROTOCONDUCTIVITY OF CRYSTALS EMBEDDED IN RESIN. 1962 [82]p. (figs. omitted). AERDL T-1653; AD-283 439.
Order from OTS or SLA $8.10 63-13020

Trans. of mono. Über die Photoleitung in Kunstharz Gebetteter Kristalle, Munich [1962].

DESCRIPTORS: *Photoconductivity, *Crystals, Plastics, *Electrophotography, Fused materials, Diffusion, Ions, Electrometers, *Zinc compounds, Oxides, *Cadmium compounds, *Sulfides, *Nickel alloys, Light, Luminescence, Particles, Absorption, Static electricity.

Empirical functions were calculated to describe the fading of the electrical surface potential of charged zinc oxide and zinc cadmium sulfide resin layers with and without exposure. The donor and acceptor concentrations in zinc oxide were determined. Information on electron concentration and on the conditions of conductivity of various fused zinc oxides was given. It was shown that zinc oxide could be fused with lithium at relatively low temperatures. Layers of zinc cadmium sulfides fused with various nickel concentrations were highly resistant. Exposure caused a space charge after a few seconds which greatly obstructed the discharge from the surface. The photoconductivity and luminescence measured at the start of exposure were lowered through the nickel fusion.

Lyalikov, K. S. and Voronkova, N. M.
THE SIZE OF AgBr GRAINS AS A FUNCTION OF THE CONCENTRATION OF THE STARTING SOLUTIONS. [1963] 10p.
Order from ATS $15.50 ATS-39Q68R

Trans of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 5, p. 333-340.

DESCRIPTORS: *Photographic emulsions, Colloids, Particle size, Solutions, Bromides, Silver compounds, Halides.

Mel'nichuk, L. P. and Broun, Zh. L.
THE PROBLEM OF GOLD SENSITIZATION OF A LIPPMANOV EMULSION. [1963] 3p.
Order from ATS $5.00 ATS-68Q68R

Trans of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 6, p. 465-467.

DESCRIPTORS: *Photographic emulsions, Sensitivity, *Gold.

Nagami, H.
DISCUSSION OF THE X-RAY CHARACTERISTIC OF XERORADIOGRAPHIC PLATES. [1963] 6p.
Order from ATS $9.75 ATS-66Q67J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 3-6.

DESCRIPTORS: *X-rays, *Electrophotography, *Photographic plates.

Veidenbakh, V. A.
THE NATURE OF THE INDUCTION PERIOD IN THE DEVELOPMENT PROCESS. [1963] 3p.
Order from ATS $5.00 ATS-67Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 6, p. 463-464.

DESCRIPTORS: *Photographic processors, *Photochemistry, Time.

Vendrovskii, K. V., Trubnikova, A. A., and Shashlov, B. A.
THE EFFECT OF STANNOUS CHLORIDE ON INFECTION DEVELOPMENT. [1963] 3p.
Order from ATS $3.50 ATS-69Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 6, p. [470]-471.

DESCRIPTORS: *Photographic processors, *Chlorides, *Stannates, Tin compounds.

Veprik, Ya. M.
PHYSICAL DEVELOPMENT ON GOLD NUCLEI. [1963] 3p.
Order from ATS $5.00 ATS-63Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 5, p. 384-385.

DESCRIPTORS: *Nuclei, *Gold, *Photographic processors.

Vifanskii, Yu. K. and Gorokhovskii, Yu. N.
EFFECT OF CONDITIONS OF THE BLACK-AND-WHITE PHOTOGRAPHIC PROCESS ON PHYSICAL SHARPNESS. Pt. 2 of Investigation of the Physical Sharpness of the Photographic Image. [1963] 11p.
Order from ATS $13.25 ATS-65Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 5, p. 369-379.

DESCRIPTORS: *Photographic images, *Photographic processors, Photography.

Plastics

Asahara, Shozo and Mitsuhashi, Keiko.
STUDIES ON THE INTERNAL PLASTICIZING EFFECT OF THE COPOLYMERIZATION OF FATTY ACID VINYL ESTERS WITH VINYL CHLORIDE. Pt. 4 of Studies on Fatty Acid Vinyl Esters. [1963] 14p. 11 refs.
Order from SLA $1.60 63-14716

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 2, p. 289-292.

DESCRIPTORS: *Plasticizers, *Fatty acids, Vinyl radicals, Esters, *Polyvinyl chloride, *Vinyl chlorides, *Copolymerization, *Phthalates, Fibers (Synthetic), Molecular structure.

Several fatty acid vinyl ester-vinyl chloride copolymers were prepared and their internal plasticizing effects were deduced from their fusion points and softnesses determined with a parallel plate plastometer. It was found that the longer the fatty acid molecule, the greater was the softening effect. It was also found that the plasticizing effects, and especially the temperature dependence of the softness of the copolymers, were greater than those of polyvinyl chloride that had been externally plasticized with dioctylphthalate when both classes of materials contained the same percentage by weight of a plasticizing agent. The differences are attributed to the fact that, whereas the fatty acid vinyl esters actually combined with polyvinyl chloride molecules to form tide chains that reduced the force of attraction between the polymer molecules, dioctylphthalate employed as the external plasticizing agent merely filled the spaces among aggregates of polyvinyl chloride molecules. (Author)

Fischer, E. W. and Schmidt, G. F.
LONG PERIODS IN STRETCHED POLYETHYLENE. [1963] [48]p. 35 refs.
Order from SLA $4.60 63-16557

Trans. of Angewandte Chemie (West Germany) 1962, v. 74, no. 15, p. 551-562.

DESCRIPTORS: *Polyethylene plastics, Deformation, Microstructure, Crystal structure, Single crystals, Crystallization, Polymers, Fibers (Synthetic), Annealing, Density, Melting, *Expanded plastics, Stretch forming.

The meridional interferences occurring in the small-angle X-ray diagram of stretched polyethylene are produced by an almost periodic arrangement of crystalline and disordered regions. The long period defined by the mean spacing of two successive crystallites depends on the pretreatment. The time and temperature dependence of the position of the small-angle reflection was investigated. The recrystallization occurring during annealing, which leads to an increase in the long period, was also investigated with other measurement methods. Comparative investigations were made on unstretched, bulk polyethylene and on polyethylene monocrystals. In these cases the long period increases in the same time relation as in stretched foils. As regards the relation between density and long period, however, characteristic differences were found. They are attributed to the fact that the chains in monocrystals and in materials crystallized from a melt are folded at the interfaces of the crystallite, but not in stretched polyethylene. Mention is made of the relation between increase in the long period and other processes observed in the same temperature range (partial melting, after-crystallization). (Author)

Hagethorn, N. B. M. and Kesteren, J. P. I. van.
INFRARED SPECTRUM ANALYSIS OF MIXTURES OF PLASTICIZERS IN PVC. [1963] 4p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-14111

Trans. of Plastica (Netherlands) 1956, v. 9, no. 8, p. 448-454.

DESCRIPTORS: *Polyvinyl chloride, *Plasticizers, Mixtures, *Infrared spectroscopy, Plastic films.

Five groups of PVC-plasticizer mixtures were mixed, so that the components in their composition could be known. The results of the analysis of these mixtures are described in this article.

Koeda, K. and Nakajima, M.
METHOD OF MANUFACTURE OF A NEW INTERNALLY PLASTICIZED MELAMINE RESIN. [1963] 7p.
Order from ATS $12.50 ATS-51P66J

Trans. of Japanese patent 15,246 (1962) applicant Nippon Kabaido Kogyo (Carbide Industries) Co., Ltd., pub. 26 Sep 62, appl. filed 6 July 60, appl. no. 30,680.

DESCRIPTORS: *Plastics, Resins, *Melamine, *Plasticizers, Manufacturing methods.

Kreiss, Manfred.
EFFECT OF FILLERS ON STRUCTURE AND ELECTRICAL PROPERTIES OF SOFT PVC MIXTURES. [1963] 12p. (figs. omitted) 23 refs.
Order from SLA $1.60 63-14188

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 12, p. 679-683.
Another trans. is available from SLA $1.60 as 62-10571 [1961] 12p.

DESCRIPTORS: *Fillers, *Polymers, *Polyvinyl chlorides, Plastics, Electrical properties, Molecular structure, Chemical bonds, Adsorption, *Plasticizers.

For abstract see Technical Translations. 7:807, 1962.

Kuschk, R. and Kaltwasser, H.
THE PRESENT STATE OF PC PRODUCTION.
13 July 62, 20p. (refs. omitted).
Order from SLA $1.60 63-14016

Trans. of Plaste und Kautschuk (East Germany) 1960, v. 7, no. 11, p. 528-533.

DESCRIPTORS: *Polyvinyl chloride, *Chlorination, Polymers, Solubility, Industrial production.

In this article, the principles of chlorination of PVC and the industrial arrangement of the process are discussed.

Meland, Thor.
FRICTIONAL PROPERTIES AND WEAR PROPERTIES OF PLASTIC MATERIALS. 18 Oct 62, 16p. (figs. omitted).
Order from SLA $1.60 63-14080

Trans. of Tek[nisk] Ukeblad (Norway) 1962, v. 109, p. 351-360.

DESCRIPTORS: *Plastics, *Friction, Mechanical properties, Abrasives, Surface properties.

Piganiol, P.
GRAFT POLYMERIZATION. 13 Oct 58, 15p. (figs. omitted) 13 refs.
Order from SLA $1.60 63-14039

Trans. of Kunststoffe (West Germany) 1958, v. 48, p. 398-402.
Another trans. is available from RIS $25.00 as RIS-61045 [20 Mar 59] 21p.

DESCRIPTORS: *Graft polymers, *Polyethylene plastics, *Polyvinyl chloride, *Acrylic resins, Polymerization, Chemical reactions, *Radiation chemistry, Radiolysis, Particle accelerators, Economics.

For abstract see Technical Translations 2: 51, 1959.

Plato, G. and Schröter, G.
FLOW PROPERTIES OF HARD PVC. [1963] 6p. (figs. omitted) 10 refs.
Order from SLA $1.10 63-14167

Partial trans. of Kunststoffe (West Germany) 1960, v. 50, no. 3, p. 163-165.

DESCRIPTORS: *Polyvinyl chloride, Creep, Viscosity, Fused materials, Lubricants, Additives.

Numerous hard PVC mixtures were studied with the aid of a melt-viscosity testing apparatus which has been useful with other plastics. After a few changes in the apparatus, this equipment made it possible to obtain in simple fashion a meaningful reference number for the flow properties of such mixtures. Effects of the various kinds of PVC, as well as that of lubricant and stabilizer additives, on workability, can be measured in this way in laboratory testings. (Author)

Richard, K., Gaube, E., and Diedrich, G.
TIME RESISTANCE OF PLASTIC PIPE: PVC AND ZIEGLER POLYETHYLENE AS RAW MATERIALS.
[1963] 14p. (figs. omitted) 6 refs.
Order from SLA $1.60 63-14187

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 11, p. 616-621.

DESCRIPTORS: *Plastic tubing, *Pipes, *Polyvinyl chloride, *Polyethylene plastics, Thermoplastics, Stresses, Time, Tolerances (Mechanics), *Ziegler catalysts, Ziegler catalysts.

In thermoplastic materials, which are to be mechanically stressed for long periods, cold flow reduces the stress capacity to a fraction of the short-term strength. Pressure pipe must therefore be designed with stress characteristics which are valid also for long periods of stress. Obviously, it is desirable to combat this decrease in stress capacity by suitable measures. In the case of hard PVC attempts are being made, by using improved raw materials combined with more careful processing, to improve the pipe quality so that it will be possible to raise the permissible stress on the pipe walls from 60 to 100 kg per sq. cm. It has been possible, in the case of Ziegler polyethylene, by widening, to raise the permissible stress of the pipe from 50 to 100 kg per sq. cm., likewise. In both types of pipe, as a result, much lower costs are to be expected. A new impact-proof PVC, still in the process of testing, shows a favorable time phase strength behavior and leads one to expect a permissible pipe wall stress of at least 100 kg per sq. cm. (Author)

Schmitt, Bernhard and Heck, Friedrich.
MEASUREMENT OF HYDROGEN CHLORIDE SEPARATION IN CABLE MASSES CONTAINING PVC, OVER LONGER PERIODS AND AT VARIOUS TEMPERATURES. [1963] 4p. (figs. tables omitted) 4 refs.
Order from SLA $1.10 63-14172

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 12, p. 555-556.

DESCRIPTORS: *Polyvinyl chloride, Chlorides, Hydrogen compounds, Separation, Temperature, Measurement, *Electric insulation, Electric cables, Stability, Electrical conductance.

The use of PVC-containing masses as insulating material in the electrical industry makes necessary a knowledge of their stability at temperatures prevailing in actual conditions of use. The usual visual method fails here, because the decomposition speed at these temperatures is much too slight. In the following article, a method is described for registering hydrogen chloride separation at the desired temperatures as a function of time. (Author)

Schneider, K. and Wolf, K.
POLYVINYL FLUORIDE, POLYTRIFLUOMONOCHLORETHYLENE. [1963] 3p. (figs. omitted).
Order from SLA $1.10 63-14021

Partial trans. (p. 171-172) of Kolloid-Zeitschrift (West Germany) 1953, v. 134, p. 149-189.

DESCRIPTORS: *Vinyl plastics, Fluorides, *Fluorocarbons, Chlorocarbons, *Halocarbon plastics, *Polyethylene plastics, Physical properties, Molecular structure.

Trommsdorff, E.
BEAD POLYMERIZATION. [1963] 4p. 9 refs.
Order from SLA $1.10 63-14193

Partial trans. (p. 76, 78-79) of Makromolekulare Chem[ie] (Switzerland) 1954 [no. 1] v. 13, p. 76-89.

DESCRIPTORS: *Polymerization, Polymers, Spheres, Production, Stabilization.

Wilski, H.
SPECIFIC HEAT OF POLYPROPYLENE. [1963] 5p. (figs. omitted) 11 refs.
Order from SLA $1.10 63-14189

Trans. of Kunststoffe (West Germany) 1960, v. 50, no. 6, p. 335-336.

DESCRIPTORS: *Propenes, *Specific heat, Enthalpy, Viscosity, Polyethylene plastics.

The specific heats and enthalpie of isotactic polypropylenes (Hostaien PPH and Hostalen PPN)[1], both based on 20°C., were measured at temperature intervals between 0 and 300° C. (Author)

Rubber and Elastomers

ADDITION OF WATER OF HYDRATION IN THE SODIUM POLYMERIZATION OF BUTADIENE. 8 Oct 48 [10]p.
Order from OTS or SLA $1.10 63-14805

Trans. from mono. (report) of I. G. Farbenindustrie, A. G., Leverkusen, n.d. (PB-70310).

DESCRIPTORS: *Synthetic rubber, *Butadienes, Polymerization, Explosions, *Catalysts, *Sodium compounds, Hydrates, Calcium compounds, Chlorides.

ATTEMPTS TO POLYMERIZE BUTADIENE WITH ACTIVE METALS. 7 Oct 48 [2]p.
Order from OTS or SLA $1.10 63-14804

Trans. from mono. (report) of I. G. Farbenindustrie, A. G., Leverkusen, n.d. (PB-70310).

DESCRIPTORS: *Synthetic rubber, *Butadienes, Polymerization, *Catalysts, *Aluminum, *Magnesium, Iodine, Mercury.

THE INFLUENCE OF THE SODIUM SURFACE ON THE POLYMERIZATION OF BUTADIENE. 11 Oct 48 [7]p.
Order from OTS or SLA $1.10 63-14803

Trans. from mono. (report) of I. G. Farbenindustrie, A. G., Leverkusen, n.d. (PB-70310).

DESCRIPTORS: *Synthetic rubber, *Butadienes, Mechanical properties, Polymerization, Catalysts, *Sodium, Surface properties, Ethylenes, Dioxides, Heterocyclic compounds.

POLYMERIZATION WITH SODIUM-COMMON SALT MIXTURE. 11 Oct 48 [4]p.
Order from OTS or SLA $1.10 63-14806

Trans. from mono. (report) of I. G. Farbenindustrie, A.G., Leverkusen, n.d. (PB-70310).

DESCRIPTORS: *Synthetic rubber, *Butadienes, Mechanical properties, Polymerization, *Catalysts, *Sodium, Sodium compounds, Chlorides, Salts.

Butadiene diluted with petroleum ether can be advantageously polymerized with the sodium-common salt powder. Small amounts of sodium approximating 0.1% are most favorable. An addition of 0.5% of dioxane makes the polymerizate more uniform and improves its mechanical properties considerably. Sodium-common salt powder is only suitable for polymerizations without dilution and, in the absence of a retarding agent, when external cooling is available. (Author)

Antykov, A. P.
SYNTHESIS OF POLYRHODANIDE POLYTHIOCYANATE)-EPOXIDE RUBBER AND RESIN. [1962] 3p. 6 refs. [DSIR] NLL M 8913.
Order from OTS or SLA $1.10 63-15173

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1961, v. 34, no. 1, p. 227-229.

DESCRIPTORS: Synthesis, Rubber, *Synthetic rubber, *Resins, *Epoxy resins, Thiocyanic acid, *Thiocyanates, *Epoxides, Chemical analysis, Physical properties.

Polythiocyanate-epoxide rubber and polythiocyanate-epoxide resin, produced by the method discovered, copolymerise very readily on milling at 40-50°C. with butadiene-styrene rubber SKS-30 and acrylonitrile rubber (SKN-40). These rubbers, when vulcanised by normal rubber vulcanisation methods, have a 25-30 per cent. greater tensile strength (in the case of the copolymer with 10 per cent. polythiocyanate-epoxide resin), have greater hardness, have very little solubility in the usual organic solvents, are characterised by resistance to low temperatures and the [action of the] atmosphere and are elastic. (Author)

Behre, J.
ON METHODS FOR DETERMINING THE ACTIVITY OF RUBBER FILLERS (CONCLUSION). [1963] 8p. (figs. omitted) 4 refs.
Order from SLA $1.10 63-16252

Trans. of Kautschuk und Gummi (West Germany) 1948, v. 1, no. 6, p. 153-156.

DESCRIPTORS: *Rubber, Vulcanizates, *Fillers, Surface properties, Measurement, Binders.

Glander, F.
INVESTIGATIONS ON THE QUESTION OF THE REINFORCING EFFECT OF FILLERS IN VULCANIZED PRODUCTS. [1963] 17p. (figs. omitted) 14 refs.
Order from SLA $1.60 63-16251

Trans. of Kautschuk und Gummi (West Germany) 1961, v. 14, no. 10, p. WT 302-WT 307.

DESCRIPTORS: *Rubber, Vulcanizates, *Fillers, Volumetric analysis, Density, Physical properties.

Topics include: A new voluemtric method for the determination of the activity of fillers; adsorbable as well as desorbable shell in the reinforcing fillers; and parallelism between physical values of vulcanates and analytical chemical results.

Krasuskaya, M. P. and Knunyants, I. L.
METHOD OF OBTAINING THERMOSTABLE TRIAZINE RUBBER. 14 Mar 63 [4]p. FTD-TT-63-176. AD-401 598
Order from OTS or SLA $1.10 63-19252

Unedited rough draft trans. of Russian patent 145,748 (732082/23-4) 25 May 61.

DESCRIPTORS: *Triazines, *Synthetic rubber, Synthesis (Chemistry), Heat resistant materials, Elasticity, Solubility, Acids, Organic solvents, Polymers.

The proposed method of obtaining thermostable triazine rubber is distinguished by the fact, that for copolycondensation are taken diamidines of higher perfluoro dicarboxylic acids, for example diamidines of perfluoro sebacic and perfluorododecamethylenedicarboxylic acids, and monoamidines of fluoro containing acids, e.g. monoamidine trifluoro acetic and 2,6-dichloroperfluorocaproic acids. (Author)

Masamune, Hitoshi.
THERMAL DECOMPOSITION PROCESS OF HYDROCARBONS HAVING 5 CARBON ATOMS AND CONJUGATED DOUBLE BOND. July 63, 3p.
Order from SA $16.00 SA Code-P-58

Trans of [published] Japanese patent 2015]1962, cl. 16-B-123 (16-B-120.11) appl. no. 11188/1959, 9 Apr 59, pub. 16 May 62, by Mitsubishi-Yuka, Inc.

DESCRIPTORS: *Synthetic rubber, *Butadienes, Production, Hydrocarbons, Petroleum, *Isoprene, Pyrolysis, Hydrogen.

Wood and Paper

Brauns, Otto and Jordansson, Lars.
DRYING OF PULP WEBS SUCH AS PAPER OR THE LIKE PULP WEBS, tr. by P. C. C. 18 Mar 63, 10p. (fig. omitted).
Order from OTS or SLA $1.10 63-19065

Trans. of French patent 1,198,432, internat'l cl. D21d, by Stiftelsen Pappersbrukens Forskningsinstitut, Sweden, appl. 14 Jan 58, granted 15 June 59, pub. 7 Dec 59 (appl. in Sweden 17 July 57).

DESCRIPTORS: *Dehydrators, Presses (Machinery), Roll, Wood pulp, Materials, *Paper, Processing.

Nisser, Henrik von and Brecht, Walter.
TWO NEW MEASURINGS FOR ASSOCIATED FIBERS WITH RESPECT TO THE DETERMINATION OF SHEET STRENGTH. [1963] 4p. (figs. omitted).
Order from SLA $1.10 63-14472

Trans. of Svensk Pappers-tidning, 1963 [v. 66, no. 2] p. 37-41.

DESCRIPTORS: Measurement, *Fibers, Determination, *Sheets, Mechanical properties, Surface properties, Cellulose, Chemical bond, Paper, Adhesion.

In order to express an opinion about the possibility of a solid bond of two fibers, two factors were determined-surface condition and softness of the fibers. This experiment is an endeavor to determine the condition of the fiber in a direct process, that is, without introducing indirect measuring processes such as permeability, water retention measurements, or other methods, which if ideal conditions were present, would permit a mathematical calculation of the fiber condition. (Author)

Öman, E.
MORDANTS WITH ROSIN (RESIN) SIZING. [1963] 7p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-16052

Trans. of Svensk Pappers-tidning, 1927, v. 30, p. 651-653.

DESCRIPTORS: *Paper, *Sizing, *Resins, Wood pulp, Paper industry, *Salts, Chlorides, Nitrates, Sulfates, Aluminum compounds, Sodium compounds, Potassium compounds, Magnesium compounds, Calcium compounds, Ammonium radicals.

Stoldt, Ernest.
SPIKED DRUM FOR OSIER STRIPPING MACHINES, tr. by J. R.-P. 14 Mar 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19059

Trans. of East German Deutsches Ausschliessungspatent (exclusive patent) 22,305, cl. 38g 1/50, appl. 3 Feb 59, granted 23 Nov 61.

DESCRIPTORS: *Wood, Processing, *Machines, Design.

MATHEMATICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 230 (PHYSICS AND MATHEMATICS SERIES). 1 July 63, 16p. JPRS: 19969.
Order from OTS $0.50 63-31175

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *Czechoslovakia, Combinatorial analysis, Partial differential equations, Tensor analysis, Operators (Mathematics), Groups (Mathematics), Algebra, Convex bodies, Differential geometry, Laboratories, Vanadium compounds, Carbides, Ferrites, Absorption, Secondary emission, Viscosimeters, Cryostats, X-rays, Phosphorescent materials, Semiconductors, Conferences, Low temperature research, Graphic analysis, Topology, Potential theory.

BIBLIOGRAPHY OF POLISH MATHEMATICS, 1944-54. 1963 [133]p. PL-480 Comm.
Order from OTS $1.25 61-11300

Trans. of Polskie Towarzystwo Matematyczne. Roczniki. Seria II: Wiadomosci Matematyczne [1957, v. 2, no. 2, p. 1-154].

DESCRIPTORS: *Mathematics, *Bibliographies, Mathematical logic, Topology, Functional analysis, Functions, Differential equations, Integral equations, Calculus of variations, Geometry, Algebra, Number theory, Probability, Mechanics, *Poland.

Contents:
Foundations of mathematics with the theory of sets and mathematical logic
Topology
Functional analysis
Real functions
Differential equations, integral equations and variational calculus
Analytic functions
Geometry
Algebra and theory of numbers
Probability theory and statistics
Theoretical mechanics, applications to technology and mathematical computers
History, didactics, popularization and organization of mathematics.

PEKING UNIVERSITY JOURNAL, NATURAL SCIENCE, 1956, VOL. 2, NO. 4 [AND] 1957, VOL. 3, NOS. 1-2, 4: TABLE OF CONTENTS AND SELECTED ABSTRACTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, University Journal 1, on Contract AF 19(604)8505. Aug 62 [38]p. Emmanuel Coll. Research Language Center rept. no. Univ. Jour. 1.
Order from OTS or SLA $3.60 63-15756

Trans. of table of contents and selected abstracts of Pei Ching Ta Hsüeh Hsüeh Pao: Tzu Jan K'o Hsüeh (Chinese People's Republic) 1956, v. 2, no. 4; 1957, v. 3, nos. 1-2, 4.

DESCRIPTORS: *Science, Periodicals, *China, Abstracts, *Mathematics, Number theory, Functions, Polynomials, Fourier analysis, Series, Real variables, Algebras, Algebraic topology, Operators (Mathematics), Differential equations, Matrix algebra, Plasticity, Cathode followers, Video amplifiers, Acids, Ketones, Condensation reactions, Electrons, Elastic scattering, Zinc, Titration, Geophysics, Wind, Geology, Paleoecology, Stratigraphy.

Kazakov, I. E.
CERTAIN PROBLEMS OF THE THEORY OF STATISTICAL LINEARIZATION AND ITS APPLICATION. 27 Feb 63 [28]p. 5 refs. FTD-TT-62-1385.
Order from OTS or SLA $2.60 63-19176

Unedited rough draft trans. of mono. Trudy I Mezhdunarodnogo Kongressa Mezhdunarodnoi Federachii po Avtomaticheskomu Upravleniyu, Moscow, 1961, p. 68-83.

DESCRIPTORS: Theory, *Statistical functions, *Probability, Transformations (Mathematics), Operators (Mathematics), Automatic, Control systems, Nonlinear systems, Analysis, Linear systems.

An examination of the general aspects of the theory of statistical linearization based on the approximation of an arbitrary nonlinear transformation of a random function by an equivalent linear operator. Applications of this theory to an analysis of the accuracy of nonlinear automatic control systems are given. Practical methods of determining the equivalent operator for a nonlinear transformation of random functions are recommended. (Author)

Computing Devices

AUTOMATION, 1963 [VOL. 8] NO. 1: [SELECTED] TRANSLATIONS. 31 May 63, 89p. 16 refs.
JPRS: 19518.
Order from OTS $2.25 63-21968

Trans. of Avtomatyka (USSR) 1963 [v. 8] no. 1, p. 10-23, 39-53, 63-66, 70-72.

DESCRIPTORS: Automation, *Computer logic, *Cybernetics, *Computers, *Integrators (Computers), Digital computers, Errors, *Coding, *Control, Theory, Learning, *Artificial intelligence.

Contents:
On Rosenblatt's theorems and systems of the perceptron type, by H. L. Otkhmezuri
Improving the accuracy of the digital integrator, by B. O. Sihov
Definitions and classifications of codes, by V. A. Stulov
American research on automatic control theory, by S. F. Kozubovs'kii.

ELECTRONIC MODELING. 5 June 63, 12p. 6 refs.
JPRS: 19563.
Order from OTS $0.50 63-21983

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1963, no. 4, p. 447-453.

DESCRIPTORS: *Algebra, Equations, Electronic equipment, *Differential equations, *Analog computers.

Contents:
On the synthesis of electronic models for algebraic objects, by G. E. Pukhov and A. E. Stepanov
Method for modeling differential equations with boundary conditions on analog computers, by A. F. Verlan'.

Brusentsov, N. P.
LOGICAL ELEMENT. 5 Mar 63 [5]p.
FTD-TT-62-1500; AD-400 537.
Order from OTS or SLA $1.10 63-19410

Unedited rough draft trans. of Russian patent 145070(698409/26) 22 Feb 61.

DESCRIPTORS: *Computer systems components, *Computer logic, Algebras, Mathematical logic, Computers, Magnetic amplifiers.

The invention involves a logical element to realize logical functions by algebraic combination of input ampere-turns, made on the basis of a high speed magnetic amplifier with current pulse feeding on one core and one diode, characterized by the fact, that, for the purpose of eliminating the shunting effect of restriction windings, return of information into the preceding stage and stabilization of amplitude of output current pulse, into the output circuit of the element in series with the diode and secondary winding of the core is connected a nonlinear stabilitron type resistor, common for all elements of the machine (block), connected to power lines, feeding elements with current pulses and shunted by greater capacitance. (Author)

Chentsov, R. A.
INFLUENCE OF THERMAL EFFECTS ON THE OPERATING SPEED OF SUPERCONDUCTING COMPUTER ELEMENTS. 18 Apr 63 [36]p. 11 refs.
FTD-TT-62-1867.
Order from OTS or SLA $3.60 63-19484

Unedited rough draft trans. of Vliyanie Teplovykh Effektov na Bystrodeistvie Sverkhprovodyashchikh Elementov Vychislitel'noi Mashiny, Moscow, 1961, 45p.

DESCRIPTORS: *Computer storage devices, Memory devices, Superconductivity, Temperature, Operation, Relaxation time, Computer systems components, *Thermodynamics.

Thermal effects in the trapped flux superconducting memory element are investigated. Those effects originate in the Joule heating during switching process. The recommendations how to minimize undesirable overheating effects are given. (Author)

Leilich, H. O.
TECHNICAL PROBLEMS IN THE DEVELOPMENT OF MAGNETIC-DRUM MEMORIES. [1963] 12p. (3 figs. omitted) 8 refs.
Order from SLA $1.60 63-16602

Trans. of Elektronische Rundschau (West Germany) 1955, v. 9, no. 10, p. 365-368.

DESCRIPTORS: Data storage systems, *Magnetic core storage, *Computer storage devices, Digital computers, Memory devices.

A description of the information store developed for the Perm (programmgesteuerte elektronische Rechenanlage München) digital computer. The drum is 22 cm long by 10 cm in diameter and rotates at 15,000 r. p. m. It has 200 tracks for storing 50 bit words at any one point around the drum. The "bit" spacing around the drum is 0.6 mm, giving a total capacity of 8192 numbers and 409,600 binary units. The combined writing and reading head is pear-shaped, rather than circular with a gap 60 microns long to give a concentrated field; along the track in the drum coating. The head coil is a 50-turn winding and the core is of 10-micron mumetal 7mm long. Spacing between head and drum is 25 microns. The head design is described in great detail. (Author)

Podlipenskii, V. S.
MAGNETIC LOGICAL ELEMENTS. 5 Mar 63 [5]p.
FTD-TT-62-1502. AD-400 536.
Order from OTS or SLA $1.10 63-19409

Unedited rough draft trans. of Russian patent 145067(697504/26) 13 Feb 61.

DESCRIPTORS: *Computer systems components, *Computer logic, *Magnetic cores, Magnetic amplifiers.

The invention concerns a magnetic logical element, containing a core with rectangular hysteresis loop, having controlling and functional windings, to each circuit of which are in series connected diode, resistance, and AC voltage source, distinguished by the fact, that for the purpose of reducing the equipment and increasing the rapid action during the execution of operation "I" with negation, the control winding has two sequential inputs. (Author)

MECHANICS

Borodachev, N. M.
ON THE DETERMINATION OF VERTICAL SETTLING OF THE BOUNDARY OF A HALF-SPACE IN THE CASE OF PLANAR DEFORMATION (A DYNAMIC PROBLEM) tr. by Heinrich Beckert. 6 Apr 63 [12]p. 5 refs. RSIC-9.
Order from OTS or SLA $1.60 63-19698

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Stro[itel'st]vo i Arkhitekt[ura] (USSR) 1958 [v. 1] no. 6, p. 70-75.

DESCRIPTORS: *Elasticity, *Deformation, Dynamics, Mathematical analysis, Integral transforms, Differential equations, Integration, Correlation techniques.

Koshmarov, Yu. A.
HYDRODYNAMICS AND HEAT TRANSFER OF THE TURBULENT FLOW OF AN INCOMPRESSIBLE FLUID IN THE GAP BETWEEN ROTATING COAXIAL CYLINDERS. 24 Jan 63 [16]p. 8 refs. FTD-TT-62-1743; AD-299 645.
Order from OTS or SLA $1.60 63-19436

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 5, p. 5-14. Another trans. is available from ICE in v. 2, no. 4, $15.00/year.

DESCRIPTORS: *Hydrodynamics, *Heat transfer, *Turbulent flow, Fluid flow, Cylinders, Rotation.

The article gives theoretical solutions of the hydrodynamic and thermal problems for the steady-state turbulent flow of an incompressible fluid in an annular channel formed by two smooth coaxial cylinders rotating with respect to each other. (Author)

Morgunov, V. K.
NEW APPARATUS TO STUDY THE KINEMATICS OF MOVING OBJECTS. 16 Apr 63 [12]p. 4 refs. FTD-TT-62-1684.
Order from OTS or SLA $1.60 63-19483

Unedited rough draft trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 12, p. 30-36. Another trans. is available from OTS or SLA $1.60 as 62-18646 [1962] 13p.

DESCRIPTORS: *Mechanics, *Motion-picture photography, Motion picture cameras, Motion pictures, Design, Photography.

For abstract see Technical Translations 9: 941, 1963.

Portnov, I. G. and Zotov, G. A.
CONSECUTIVE OPERATION OF GAS EJECTORS UNDER STEADY-STATE CONDITIONS. 3 Apr 63 [23]p. 2 refs. FTD-TT-63-184.
Order from OTS or SLA $2.60 63-19529

Unedited rough draft trans. of mono. Razrabotka i Ekspluatatsiya Gazovykh Mestorozhdenii, Transport Gaza, Moscow, 1959, p. 267-284.

DESCRIPTORS: Gases, Ejection, *Jet pumps, *Gas flow, Pressure, Operation.

The use of two-stage ejection allows us to significantly raise the pressure of the gas mixture and resultant coefficient of ejection. It is impossible to obtain the same resultant parameters with one stage operating stably. The resultant coefficient of ejection of a two-stage device is more stable (in relation to changes of the high-pressure gas flow at the second stage) than the coefficient of ejection of a single-stage device. The developed method of solving problems by multistage ejection allows us to determine: (1) the resultant pressure and coefficient of ejection from known pressures at the inlet and from stage dimensions: (2) the dimensions of each stage of the device from known resultant parameters and pressures at the inlet: (3) the dimensions of the other stage and value of the other resultant parameter from known dimensions of one stage and value of one of the resultant parameters. (Author)

Slomyanskii, G. A.
TESTING OF FLOATED GYROSCOPES. 8 Mar 63 [48]p. 3 refs. FTD-TT-62-1230; AD-299 675.
Order from OTS or SLA $4.60 63-19441

Unedited rough draft trans. of Aviatsionnyi Tekhnologicheskii Institut, Moscow, Trudy (USSR) 1959, v. 40, p. 21-54.

DESCRIPTORS: *Gyroscopes, *Integrators, Supports, Rotation, Design, Tests, Test equipment, *Drift.

Topics: Floated integrating gyroscope; amplifier; motor with platform; transient response on instantaneous application of current I_{zd} = const to setter control winding; influence of moments M_p and M_t on performance of apparatus; use of reducing gear; selection of basic parameters for rotary platform; use of rotary-platform apparatus.

Yaroshevskii, V. A.
APPLICATION OF THE ASYMPTOTIC METHOD OF CERTAIN PROBLEMS OF THE DYNAMICS OF VEHICLES. 14 Mar 63 [21]p. 7 refs. FTD-TT-63-164.
Order from OTS or SLA $1.60 63-19166

Unedited rough draft trans. of Inzhenernyi Zhurnal (USSR) 1962, v. 2, no. 2, p. 211-221.

DESCRIPTORS: Vehicles, *Dynamics, Satellites (Artificial), Elliptical orbit trajectories, Gliders, Motion, Ballistics, Oscillation, *Equations of motion, *Series, Integration.

The article generalizes and reduces to a compact form the rule of the conservation of the "adiabatic invariant." As an example of applying the formulas obtained, we examine problems concerning orbital decay of a satellite, the skip-glide motion of a glider, and the oscillations of a vehicle about the center of mass on a flight path with a variable velocity. (Author)

Aerodynamics and Pneumatics

Bolotin, V. V.
NONLINEAR FLUTTER OF PLATES AND SHELLS. [1963] 37p. 19 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R45. When supply is exhausted, order from OTS or SLA $3.60, 63-16632

Trans. of Akademiya Nauk SSSR. Institut Mekhaniki. Inzhenernyi Sbornik, 1960, v. 28, p. 56-75.

DESCRIPTORS: *Flutter, Sheets, *Elastic shells, Stability, Supersonic flow, Gas flow, *Aeroelasticity, Fluid dynamics properties, Numerical analysis, Aerodynamics, Panels (Structural), Structural shells, Aerodynamic heating.

The study is devoted to an investigation of nonlinear flutter of plane and curvilinear panels, about which there is a flow with great supersonic velocities. It is based on nonlinear formula. The tension of the mid-surface, as well as buckling of the panel due to aerodynamic heating, are taken into account. The problem is solved with regard to boundary conditions depending on the joint operation of the panel and the design as a whole. (Author)

Karpov, N. Ya. and Netylev, A. S.
DIFFUSER OF AERODYNAMIC UNIT (PLANE, REGULABLE, WITH ROTARY PANELS). 18 Apr 63 [5]p. FTD-TT-63-286.
Order from OTS or SLA $1.10 63-19485

Unedited rough draft trans. of Russian patent 143,658, 1961, appl. no. 725,386/40-23, 8 Apr 61.

DESCRIPTORS: Aerodynamics, *Diffusers, Design, Control, Drive shafts.

The proposed diffuser differs from the known ones by the fact for the purpose of simplification of the design and operation, heightening of the dependability of the work, and the synchronization of the turning of the panels, in the diffuser there is provided a guide screw with the drive disposed perpendicularly to the plane of the shafts turning the panels and symmetrically with relation to these axes, and which in turning moves a master nut with two symmetrically disposed rotary bands, leading by the end levers joined with the ends of the shafts for turning the panels. (Author)

Makhin, V. A., Prisnyakov, V. F., and Tokar', I. F.
THEORY OF THE DISCHARGE OF A BOILING LIQUID THROUGH A SWIRL JET. 5 Feb 63 [18]p. 3 refs. FTD-TT-62-1836; AD-299 632.
Order from OTS or SLA $1.60 63-19211

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962, no. 3, p. 166-176.

DESCRIPTORS: *Jet mixing flow, Boiling, Liquids, Vapors, *Jets, Nozzles, Theory, Fluid mechanics.

Pudovkin, M. A.
SOLUTION OF A PROBLEM IN SUBSURFACE HYDROMECHANICS UNDER ELASTIC CONDITIONS. [1963] 9p.
Order from ATS $11.00 ATS-11Q69R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 11, p. 39-45.

DESCRIPTORS: *Fluid flow, Liquids, Motion, *Hydrodynamics, *Elasticity.

METALLURGY

ERRORS IN THE CONTROL OF THE GAS FLOW AND THE DISTRIBUTION OF MATERIALS IN THE THROAT. Symposium of 11 papers by Experienced Russian Blast Furnace Men. June 63. MT Trans-303
Order from MT $60.00

Trans. from various issues of #Metallurg (USSR) 1960 [v. 5, no. 8] to 1962 [v. 7, no. 8].

DESCRIPTORS: *Blast furnaces, *Gas flow, Materials, Distribution, Errors, Design.

INSPECTION OF A LEAD SODIUM CELL IN THE AKEN WORKS OF THE I. G. FARBENINDUSTRIE. 16 Aug 48, 4p.
Order from SLA $1.10 63-10989

Trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Electrolytic cells, *Lead alloys, *Sodium alloys, Potassium compounds, Chlorides, Production, Industrial plants.

Andrieux, J. L.
PREPARATION OF METAL POWDERS BY HIGH TEMPERATURE ELECTROLYSIS. [1963] 5p.
Order from SLA $1.10 63-14812

Trans. of Journal du Four Électrique et [des Industries Electrochimiques] (France) 1948, v. 57, p. 26-27.

DESCRIPTORS: *Powder metallurgy, *Power metals, *Electrolysis, Synthesis (Chemistry), Beryllium, Titanium, Zirconium, Thorium, Tantalum, Columbium, Chromium, Molybdenum, Tungsten, Uranium, Manganese, Copper, Silver, Iron, Cobalt, Nickel, Platinum, Iron alloys, Tungsten alloys, High-temperature research.

Bobro, Yu. G.
THE EFFECT OF SOME ELEMENTS ON THE PROPERTIES OF S. G. IRONS. Feb 62 [17]p. (figs. omitted) 4 refs. [DSIR] NLL M. 3635.
Order from OTS or SLA $1.60 62-25318

Trans. of unidentified mono., pub. by Metalloved. Term. Obrab. Gos. Nauch.-Tekh. Komitet Sov. Min. Ukr. S.S.R., Inst. Tekh. Inf., 1961, p. 281-291.

DESCRIPTORS: *Iron alloys, *Aluminum alloys, *Magnesium alloys, *Casting alloys, Mechanical properties, Friction, Nitration, Oxidation, Corrosion-resistant alloys, Production, Chromium alloys, Nickel alloys, Titanium alloys, Microstructure.

Borisenko, A. I.
PROTECTION OF NIOBIUM FROM HIGH-TEMPERATURE GAS CORROSION. 12 Feb 63 [58]p. 39 refs. FTD-TT-62-1251; AD-299 659.
Order from OTS or SLA $5.60 63-19501

Unedited rough draft trans. of mono. Zashchita Niobiya ot Vysokotemperaturnoi Gazovoi Korrozii, Moscow/Leningrad, 1961, 40p.

DESCRIPTORS: *Niobium, *Corrosion inhibition, High temperature research, Gases, Oxidation, Protective treatments, *Coatings, Niobium alloys, Chromium, Tungsten alloys, Titanium alloys, Vanadium alloys, Zirconium alloys, Combustion chamber gases, Molybdenum, Aluminum.

This book sets forth the state of the problem of the protection of niobium from high-temperature gas corrosion in the contemporary phase of the problem's development. The causes of the intense oxidation of niobium and its alloys, which may be prevented by applying protective surface coatings that insulate the metal from a gaseous medium, are analyzed. Means of protecting niobium from oxidation are cited and their subsequent development is projected. (Author)

Heynert, Gerhard and Hedden, Kurt.
TEMPERATURE PROFILE AND KINETICS OF THE CONVERSIONS IN THE BLAST FURNACE. [1963] 25p. (figs. tables) 35 refs.
Order from SLA $2.60 63-16220

Trans. of Chemie-Ingenieur-Technik (West Germany) 1961, v. 33, no. 7, p. 469-478.

DESCRIPTORS: *Blast furnaces, Heat transfer, Reaction kinetics, Temperature, Oxidation-reduction reactions, Ores (Metal sources), Gases, Coke, Iron.

Iovstyukhin, A. I., Nikishanov, V. V., and Milov, I. V.
ALL-PURPOSE LABORATORY DEVICE FOR SMELTING AND ZONE-REFINING METALS BY THE ELECTRON BEAM METHOD. 13 May 63, 10p. JPRS: 19147.
Order from OTS $0.50 63-21803

Trans. of mono. Razdelenie Blizkikh po Svoistvam Redkikh Metallov (Separation of Rare Metals Closely Related in Properties) Moscow, 1962, p. 233-242.

DESCRIPTORS: Smelting, *Electron beams, Vacuum apparatus, Zone melting, *Laboratory equipment, Electron guns, Metals, Impurities, Alloys, Tungsten, Germanium, Aluminum.

A laboratory device for melting and zone-refining of difficultly fusible metals has been designed and produced Experiments performed confirm the estimate and the possibility of the successful performance of the equipment. Tests have supported its suitability for diverse scientific studies, for smelting control samples of pure metals and alloys, for zone-refining, and other purpose. (Author)

Jezek, J. and Voboril, J.
METHODS OF PREPARATION OF THIN FOILS FOR THE STUDY OF METAL STRUCTURES IN THE ELECTRON MICROSCOPE. June 63.
Order from MT $17.25 MT Trans-296

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 10, p. 720-724.

DESCRIPTORS: *Foils, Preparation, *Metallography, Electron microscopes, Thin films.

Lyalikov, Yu. S.
POLAROGRAPHIC METHOD OF IRON DETERMINATION IN ORES AND SLAGS IN THE METALLURGIC INDUSTRY, tr. by Ingeborg V. Baker. 1 June 63 [16]p. 6 refs. RSIC-15. AD-405 860.
Order from OTS or SLA $1.60 63-19697

Trans. of Zavodskaya Laboratoriya (USSR) 1938, v. 7, p. 395-399.

DESCRIPTORS: *Polarographic analysis, *Iron, Ores (Metal Sources), Slags.

A polarographic determination method is developed for determining trivalent iron in an ammoniacal medium from tartrate and citrate complexes in slags (blast-furnace and martensite) and ores. The duration of iron determinations in slags and ores is reduced to 10 - 15 minutes. (Author)

Namy, G.
PROBLEMS OF CONSTRUCTION FOR CONTINUOUS CASTING MACHINES. Jan 63 [18]p. (figs. omitted).
Order from SLA $1.60 63-16466

Trans. of Revue de Metallurgie (France) 1962, v. 59, no. 10, p. 817-827.

DESCRIPTORS: *Industrial equipment, *Casting, Steel, Machines, Design, Construction, Castings, Steel industry, Industrial plants.

Pomey, J. and others.
METALLOGRAPHIC USES OF HOT HARDNESS. [1962] 6p.
Order from K-H $7.50 K-H 8963

Trans. of mono. from the Comptes Rendus of the Academie des Sciences Session of 10/14/57, p. 1424-1427.

DESCRIPTORS: *Metallography, Hardness, Hot working.

Povidailo, V. A. Silin, R. I., and Shchigel', V. A.
CASTING IN VIBRATION MOLDS. 1 Apr 63 [8]p. FTD-TT-63-46; AD-402 449.
Order from OTS or SLA $1.10 63-19424

Unedited rough draft trans. of mono. Vibratsionnye Ustroistva v Mashinostroenii, Moscow, 1962, p. 89-94.

DESCRIPTORS: *Vibrators (Mechanical), Design, Castings, Production, *Casting, *Dies, *Conveyors, Machining, Foundries.

Prenosil, B.
NEW WAYS OF INCREASING THE STRENGTH OF CONSTRUCTION STEELS. Mar 63, 21p., 16 refs.
Order from SLA $2.60 63-16487

Trans. of Strojirenstvi (Czechoslovakia) 1962, v. 12, no. 9, p. 677-684.

DESCRIPTORS: *Steel, *Quenching (Cooling), *Electromagnetic fields, Austenite, Mechanical working, Tensile properties, Plasticity, Deformation, Elasticity, Construction.

By quenching steels in a strong electro-magnetic field, a substantial increase of the tensile strength and yield strength can be obtained. The increase of the yield strength is more significant so that the elastic ratio $\frac{\sigma_K}{\sigma_P}$, approaches 1. By high-strength steels the increase of strength is stated to be more than 60 kg/mm^2 (85,400 psi) and the yield strength almost 90 kg/mm^2 (128,000 psi). The mechanism of the processes producing the increase of mechanical properties by quenching in a strong electro-magnetic field remains for the time unexplained. The quenching in a strong field will find a larger application in comparison with the method founded on the forming of meta-stable austenite. It allows the production of parts in the soft state. After the quenching in a strong electro-magnetic field, only a finish grinding operation for eliminating the distortion and obtaining the desired surface quality, is necessary. (Author)

Schreiner, H.
STRUCTURAL EVALUATION OF MELT AND SINTER MATERIALS (Zur Gefügelbeurteilung von Schmelz- und Sinterwerkstoffen). [1963] 11p. (foreign text included) 11 refs.
Order from SLA $1.60 63-16309

Trans. of Metall (West Germany) 1961, v. 15, no. 5, p. 422-425.

DESCRIPTORS: *Powder metallurgy, Metallography, Powder alloys, Powder metals, *Crystal structure, Porous metals.

Beginning with the metallic sinter materials now in technical use, a survey is made of the theoretically possible and actually occurring structures of single and multi-components compact and porous materials. Various methods are suitable for the determination of these structures. Erroneous evaluation of the interior structure of contact and porous materials are possible by means of metallographic cuts. Such mistaken evaluations are discussed with the use of several examples, and suggestions are made on how to avoid them. (Author)

Smrha, L.
THEORETICAL DETERMINATION OF INGOT FEEDER HEAD SIZE ON THE BASIS OF ITS THERMAL BALANCE. June 63.
Order from MT $14.35 MT Trans-278

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 9, p. 626-629.

DESCRIPTORS: * Thermodynamics, *Castings, Theory, Design.

Toitot, M. and Roques, C.
CONSTRUCTION OF A BED FOR CHARGING STEELS WITH HYDROGEN BY ELECTROLYTIC MEANS. Special Technical rept. no. 4, 1 Jan 61-31 Mar 62, on Contract 073-61-12-RDF. [1962] 20p. 6 refs.
Order from OTS or SLA $2.60 EURAEC-344

Trans. of a rept. from Société des Forges et Ateliers du Creusot [Paris] (France) n. d.

DESCRIPTORS: *Steel, Hydrogen, Hydrogen embrittlement, Laboratory equipment, Electrolytic cells, Annealing, Failure (Mechanics), *Electrolytic polishing, Electrolytes.

An apparatus is described which was constructed with a view to carrying out systematic studies on the weakening influence of hydrogen, introduced in protonic form by electrolytic means. (See also EURAEC-343)

Treister, Yu. A.
NEW MEANS OF COMPLEX AUTOMATION OF BLAST FURNACE PRODUCTION. June 63.
Order from MT $5.75 MT Trans-280

Trans. of #Metallurg (USSR) 1962, v. 7, no. 6, p. 3-5. Another trans. is available from OTS or SLA $2.60 in 62-33115, JPRS-15336, 19 Sep 62 [30]p.

DESCRIPTORS: *Blast furnaces, Automation.

Vlasov, A. Ya. and Ayurzanain, B. A.
TEMPERATURE DEPENDENCE OF MAGNETOSTRICTION AND COEFFICIENT OF LINEAR EXPANSION OF ELINVAR. 15 Feb 63 [9]p. 8 refs. FTD-TT-63-7; AD-298 776.
Order from OTS or SLA $1.10 63-19307

Unedited rough draft trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 6, p. 99-102.

DESCRIPTORS: Alloys, Nickel alloys, Chromium alloys, Iron alloys, *Magnetostriction, Temperature, *Thermal expansion.

Waxweiler, P., Lorang, J. and others.
INJECTION OF EXTRA HEAVY FUEL OIL IN THE TUYERES OF A BLAST FURNACE AT ARBED. June 63.
Order from BISI £5 5s BISI-3034

Trans. of mono. Journées Internationales de Siderurgie, Luxembourg, 1-4 Oct 62. [Proceedings] p. 417-432.

DESCRIPTORS: *Blast furnaces, *Fuel injection, Fuel oil, Nozzles, Operation.

Wolf, Paul.
DEVELOPMENT OF THE BLASTFURNACE PROFILE IN VARIOUS COUNTRIES. [1963] 15p. (figs. omitted) 6 refs.
Order from SLA $1.60 63-16229

Trans. of Stahl und Eisen (West Germany) 1947, v. 66/67 [no. 25/26] p. 411-416.
Another trans. is available from SLA mi$2.40, ph$3.30 as 60-18219 [Dec 48] 13p.

DESCRIPTORS: *Blast furnaces, Design, Operation, Economics, Iron, Production, Coke, Fuel consumption.

Zagreba, A. V., Slin'ko, N. F., and Fedorenko, G. I.
BLOWING IN AND OPERATION OF A BLAST FURNACE OF 2000 m^3 CAPACITY. June 63.
Order from MT $16.85 MT Trans-242

Trans. of #Metallurg (USSR) 1962, v. 7, no. 1, p. 8-13.

DESCRIPTORS: *Blast furnaces, Operation

Ferrous Metals

PRESENT STATUS OF OUR KNOWLEDGE OF TEMPER BRITTLENESS. Special technical rept. no. 1, 1 Jan-31 Mar 62, on Contract 073-61-12 RDF. [1962] 41p. 30 refs.
Order from OTS or SLA $4.60 EURAEC-341

Trans. of a rept. from Societe des Forges et Ateliers du Creusot [Paris] (France) n. d.

DESCRIPTORS: *Steel, *Brittleness, Heat treatment, Dynamics, Microstructure, Impurities, Alloys, Transition temperature.

An analysis of the data in technical literature on reversible temper brittleness, confined to studies employing conventional laboratory methods.
(See also EURAEC-340)

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 119. 23 May 63, 51p. JPRS: 19364.
Order from OTS $1.50 63-21901

Trans. of #Voprosy Ekonomiki (USSR) 1963, no. 2, p. 143-144; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 3-8; and 13 selected articles from Feb-Mar 63 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Mining engineering, *Earth handling equipment, *Steel, *Open hearth furnaces, Tranformers, Annealing, *Refractory materials, *Ores (Metal sources), Housing projects, Industrial equipment, *Industrial plants, Manganese alloys, Electric furnaces, Vacuum furnaces, *Pipes, Cold-working, Welding.

Contents:
Progress is halted at the "Gigant" mine
Certain defects of large-capacity open-hearth furnaces, by N. Pasazhennikov and M. Nachkin
Zaporozhstal' plant steps up open-hearth steel production, by S. Grigor'ev
For better quality transformer steel, by A. Gusev and others
Refractory production fails to expand, by P. Nesterov
Quality of Krivoi Rog ore is dropping, by I. Tokarskii
Residential construction at Sevastopol', by K. Samusev
Industrial and civil construction in the Pridnepr region
Winter problems in the Dnepropetrovsk region
Large-diameter pipe production started at Chelyabinsk, by I. Kiselev
Sokolovsko-Sarbaiskii concentrating mill construction is lagging, by A. Pavlov and A. Vinnikov
Izhorskii metallurgical plant is expanding, by M. Korolev
A new ferromanganese alloy, by V. Kravchenko and others
Progress of ferrous metallurgy in the Soviet Union, by N. Sachko
Vacuum-arc furnaces, by V. T. Burtsev and O. D. Moldavskii
An automatic shot peening device for an electric pipe welding machine, by V. G. Bezumenko and B. V. Furmanov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 120. 27 May 63, 9p. (photo. omitted). JPRS: 19419.
Order from OTS $0.50 63-21921

Trans. of #Metallurg (USSR) 1963 [v. 8] no. 4, p. 19-24.

DESCRIPTORS: *Industrial production, *Metallurgy, *Stainless steel, *Electric furnaces, Electrostatic generators, Motion, Quality control, Chromium alloys, Slags.

Contents:
Stainless steelmaking in large electric furnaces, by I. Ya. Loiberg and S. T. Ushakov
Electromagnetic mixing during stainless steelmaking in electric furnaces, by E. I. Moshkevich and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 122. 10 June 63, 25p. JPRS: 19613.
Order from OTS $0.75 63-31011

Trans. of #Metallurg (USSR) 1963 [v. 8] no. 3, p. 10-20.

DESCRIPTORS: *Industrial production, *Metallurgy, *Steel, Industrial plants, *Smelting, Microstructure, Mechanical properties, *Blast furnaces, Oxygen, Manganese, Silicon, Aluminum, *Iron, Castings.

Contents:
For greater production of semikilled steel, by D. L. Litvinenko and others
Steel production at the Kuznetsk metallurgical combine, by A. N. Vasil'ev and others
Semikilled steel production at the plant imeni Petrovskii, by E. I. Evstaf'ev and P. S. Rubinskii
Semikilled smelting practice at the Makeevka metallurgical plant, by R. Z. Elimelakh and N. P. Mershchii
Oxygen converter problems at the plant imeni Petrovskii, by G. Davydenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 125. 14 June 63 [35]p. JPRS: 19685.
Order from OTS $1.00 63-31042

Trans. of Gornyi Zhurnal (USSR) 1963, no. 4, p. 3-12, 20-25; and from Molod' Ukrainy (USSR) 1963, 24 Apr, p. 1-2.

DESCRIPTORS: *Industrial production, *Metallurgy, *Mining engineering, *Labor, *Geology, Hydrology, *Drainage, Ores(Metal sources), Automation, Excavators, *Earth handling equipment, Welding, *Iron, *Powder metallurgy.

Contents:
For the further technical progress of the ferrous metallurgy mining industry, by R. P. Kaplunov and others
The increase of labor productivity at the Vysokogorskii mine, by S. I. Nikolaev and others
Geology and hydrology of the Vysokogorskoe deposit and operations for its draining, by V. S. Makhnev and L. V. Yudenkov
Experience of the work of the Vysokogorskoe mining administration open pit mines, by A. M. Il'yin and others
Development of automation at the Vysokogorskii mine, by I. N. Sannikov
The "1020" welding unit being installed
A miracle powder shop.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 126. 20 June 63 [40]p. 5 refs. JPRS: 19776.
Order from OTS $1.00 63-31086

Trans. of Metallurgicheskaya i Gornorudnaya Promyshlennost' (USSR) 1963, no. 2, p. 50-53, 61-66, 70-71, 81-84, 87-88.

DESCRIPTORS: *Industrial production, *Metallurgy, *Steel, Smelting, Blast furnaces, Casting, Bronze, Mechanical working, Rolling mills, Cladding, Stainless steel, Nickel, *Iron, Costs, *Natural gas, Steel industry, *Ores (Metal sources), Open hearth furnaces, Handling, *Hoists, Machines, *Conferences, *Education.

Contents:
Scientific research work performed by the Ukrainian Institute of Metals in 1962, by V. I. Dorokhov
How to reduce the cost of iron, by V. F. Bragin
Ways of increasing the efficiency of utilization of natural gas in ferrous metallurgy, by E. G. Khripko and others
Reserves in iron ore mining, by S. K, Komotskii and M. K. Komotskii
Bar mill 2300/1700, by I. I. Kuroles
A machine for ore and limestone charging into open-hearth furnaces, by K. E. Savranskii and A. B. Mezheritser
A new method of slagging off from mixers, by V. N. Brodskii and V. K. Malakhovskii
Technical conference devoted to the improvements in the oxygen-converter method of steel making, by V. Mal'kov
Republican interplant school for the intensification of work of open-hearth furnaces, by V. S. Sakharov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 127. 24 June 63 [54]p. JPRS: 19817.
Order from OTS $1.50 63-31100

Trans. from Rabochaya Gazeta (USSR) 1963, no. 66, 19 Mar, p. 2; no. 70, 23 Mar, p. 2; no. 78, 2 Apr, p. 1; no. 79, 3 Apr, p. 3; no. 81. 5 Apr. p. 2; no. 82, 6 Apr, p. 1; and Stroitel'naya Gazeta (USSR) 1963, no. 37, 27 Mar, p. 2; no. 39, 31 Mar, p. 2-3; no. 42, 7 Apr, p. 1-2.

DESCRIPTORS: *Industrial production, *Metallurgy, *Pipes, Sintering, *Industrial plants, *Construction, Furnaces, *Steel industry, Industrial equipment, Storage, Arc welding, Oxygen, *Ball bearings, Labor.

Contents:
Production of large-diameter pipe starts at Chelyabinsk, by I. Kiselev
A new sintering plant at Magnitogorsk
Late deliveries delay Tagil converter construction, by T. Inskaya
Public assistance groups take action at Azovstal'stroi, by V. Kovalev
Costly machinery hidden under snow
Elektrostal' plant masters advanced pipe welding
Dneprodzerzhinsk sintering mill construction behind schedule, by I. Timoshchenko
Problems of the Zhdanov machine-building plant, by N. Martynov and others
Progress of oxygen generating plant construction in the Ukraine, by L. Dunaeva and others
Ball-bearing production at the plant imeni Karl Liebknecht, by P. Evseev
For construction speed-up at the Krivoi Rog ore basin
Industrial construction at the Krivoi Rog mine fields
News from the oxygen generating plants under construction, by I. Turchenkov and others
Core pipe production at the Nikopol' plant, by O. Kornienko
Construction at the Zhdanov metallurgical complex.

Schenck, Hermann; Schmidtmann, Eugen and Müller, Heinz.
INFLUENCE OF ANNEALING CONDITIONS AND ALLOY COMPOSITION ON THE INNER OXIDATION OF IRON ALLOYS. 31 May 60, 23p. (figs. tables [refs.] omitted).
Order from SLA $2.30 63-14886

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1960, v. 31 [no. 2] p. 121-128.
Another trans. is available from BISI £5 5s as BISI-2675, Apr 62.

DESCRIPTORS: *Iron alloys, *Annealing, *Oxidation, Silicon alloys, Aluminum alloys, Manganese alloys, Oxygen, *Metallography, Diffusion, Solubility.

The inner oxidation of iron-silicon, iron-aluminum, iron-chrome, and iron-manganese alloys was investigated in the temperature range between 820 and 1056°C. In this there was observed the influence of annealing time, annealing temperature, concentration of the alloy element and composition of the annealing gas. (Author)

Schmidt, Theodore and Wünning, Joachim.
CONCERNING THE POSSIBILITY OF MATERIAL INTERCHANGE BETWEEN FURNACE ATMOSPHERE AND AN ANNEALING SPECIMEN DURING INDUSTRIAL ANNEALING OF COLD FORMED STEEL IN A PROTECTIVE ATMOSPHERE. [1963] [27]p. 4 refs.
Order from SLA $2.60 63-14887

Trans. of Stahl u[nd] Eisen (West Germany) 1961, v. 81 [no. 6] p. 361-366.
Another trans. is available from BISI £4 10s as BISI-2192 [1961].

DESCRIPTORS: *Steel, *Annealing, *Controlled atmospheres, Nitrogen, Hydrogen, Carbon compounds, Monoxides, Dioxides, Water vapor, Methanes, Chemical reactions, Cold-working.
Topics include: the occurrence of reactions between steel and protective atmosphere during annealing; divergence from water-vapor equilibrium in industrial practice; and suitable protective atmospheres for the annealing of steel strip with low carbon contents.

Esche, W[ilhelm] v[or] d[em] Haucke, M. and others.
DESULFURIZATION OF PIG IRON WITH FINE LIME OUTSIDE THE BLAST FURNACE. Lecture presented at the "Eisenhüttentag", Düsseldorf, 1962. Jan 63 [13]p.
Order from SLA $1.60 63-16339

Trans. of unidentified German mono., n.p., n.d.

DESCRIPTORS: *Metallurgy, *Iron, *Sulfur, *Calcium compounds, *Oxides, Sodium compounds, Carbonates, Slags, Blast furnaces, Open hearth furnaces, Separation, Cast iron, *Desulfurization

Fiala, A.
A NEW METHOD OF TAKING SPECIMENS OF LIQUID VACUUM TREATED STEEL FOR DETERMINATION OF THE CONTENTS OF ATOMIC HYDROGEN AND OF OXIDE INCLUSIONS BY MEANS OF AN IMMERSION PROBE. June 63.
Order from MT $12.00 MT Trans-277

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 8, p. 581-582.

DESCRIPTORS: *Steel, Quantitative analysis, Hydrogen, Oxides, Impurities, Liquids, Test methods.

Gunnarson, Sten.
STRUCTURE ANOMALIES IN THE SURFACE ZONE OF GAS CARBURISED STEEL AFTER CASE HARDENING. June 63.
Order from MT $14.40 MT Trans-297

Trans. of Jernkontorets [Stockholm]. Annaler (Sweden) 1962, v. 146, no. 5, p. 383-402.

DESCRIPTORS: *Steel, Gases, Impregnation, Hardening, Surfaces.

Kononov, B. Z.
SEMI-CONTINUOUS CASTING OF STAINLESS STEEL, tr. by R. C. Murray. Paper from All-Union Conference on the Continuous Casting of Steel (no. 1) [17-19] Oct 55. Aug 57 [16]p. [BISI] Trans. 607; [Trans.] no. 4500; [DSIR] NLL M.4144.
Order from OTS or SLA $1.60 62-24151

Trans. of mono. [Nepreryvnaya Razlivka Stali (The Continuous Casting of Steel)] Moscow, 1956, p. 100-110.

DESCRIPTORS: *Casting, *Stainless steel, Steel, Steel castings, Liquid metals.

Topics include main defects of the billets; and review of investigations to improve the quality of semi-continuously cast steel including use of a neutral atmosphere, use of wooden frames, increase of casting rate, hanging, lubrication of mould, and investigation of the crystallization front. Consideration is given to prospects for further improvement of billet quality.

Meissner, Horst.
INVESTIGATION OF THE PRODUCTION OF IRON FROM OXIDES AND OXIDE ORES WITH HYDROGEN CHLORIDE GAS. Doctor's thesis [Wroclaw]. [1963] 17p. 44 refs.
Order from SLA $1.60 63-16760

Trans. from Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1941, v. 245, no. 4.

DESCRIPTORS: *Iron, Oxides, *Ores (Metal sources), *Chlorination, Reduction (Chemistry), Hydrogen compounds, Chlorides, Gases, Metallurgy, Ion compounds, Theses.

Myslivec, T., Motloch, Z., and Bartek, B.
EXPERIENCE IN THE PRODUCTION OF SEMI-KILLED STEEL FOR HEAVY PLATES. June 63.
Order from MT $33.00 MT Trans-268

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 7, p. 462-471.

DESCRIPTORS: *Steel, Production, *Metal plates.

Popov, A. P., Popov, Yu. A., and Shaposhnikov, A. K.
IRONMAKING: THE SMELTING OF BLAST-FURNACE FERROSILICON FROM BAKAL ORES. June 63.
Order from BISI £4 15s BISI-3245

Trans. of Stal' (USSR) 1954, v. 14 [no. 11] p. 975-983.

DESCRIPTORS: *Smelting, *Iron, *Silicon compounds, Slags, Blast furnaces, Ores (Metal sources).

Roques, C.
BASIC STUDY OF SOME FORMS OF BRITTLENESS AFFECTING WELDED JOINTS IN HIGH-RESISTANCE STEEL. Quarterly rept. no. 1, 1 Jan-31 Mar 62, on Contract 073-61-12 RDF. [1962] 9p.
Order from OTS or SLA $1.10 EURAEC-340

Trans. of a rept. from Société des Forges et Ateliers du Creusot [Paris] (France) n.d.

DESCRIPTORS: *Steel, Brittleness, *Welds, Metallurgy, Casting.

A preliminary report concerning the mode of approach and the materials to be employed in the proposed studies. Experimental data is given on the influence of refining elements on obtaining desired casting compositions.

Saveiko, V. N.
MECHANISM OF HOT TEARING OF STEEL CASTINGS, tr. by R. C. Murray. Paper from All-Union Conference on the Continuous Casting of Steel (no. 1) [17-19] Oct 55. Aug 57 [17]p. 15 refs. [BISI] Trans. 608; [Trans.] no. 4499; [DSIR] NLL M.4143.
Order from OTS or SLA $1.60 62-24150

Trans. of mono. [Nepreryvnaya Razlivka Stali (The Continuous Casting of Steel)] Moscow, 1956, p. 241-251.

DESCRIPTORS: *Steel castings, *Casting, *Steel, Fracture (Mechanics), Liquid metals.

Speith, Karl Georg, Ende, Hans vom, and Pfeiffer, Arnold.
VACUUM TREATMENT OF STEELS IN THE LADLE. 31 Aug 60, 21p. (figs. formulae omitted).
Order from SLA $2.60 63-14856

Trans. of Stahl und Eisen (West Germany) 1960, v. 80 [no. 11] p. 737-744.
Another trans. is available from HB $12.80 as HB-4848, July 60, 5400 words.

DESCRIPTORS: *Steel, *Reduction (Chemistry), *Dehydrogenation, *Degasification, Vacuum apparatus, Vacuum pumps, Industrial equipment.

Topics include: Possibilities of degassing of steels by vacuum treatment; theoretical basis; description of the installation; results of the ladle degassing with respect to oxygen decrease; removal of hydrogen, temperature losses, purity degree of the steel and technological properties; composition of the extracted gasses; and comparison of the obtained results with data in the bibliography.

Tromel, G. and Fix, W.
THE EQUILIBRIA BETWEEN IRON MELTS AND LIME-CONTAINING PHOSPHATE SLAGS IN THE PRESENCE OF SILICA AND MANGANESE OXIDE. [1963] 21p.
Order from ATS $29.75 ATS-62Q69G

Trans. of Arch[iv für das] Eisenhüttenw[esen] (West Germany) 1962, v. 33, no. 11, p. 745-755.

DESCRIPTORS: *Iron, *Calcium compounds, *Oxides, *Phosphates, *Slags, Silicon compounds, Dioxides, Manganese compounds, *Chemical equilibrium.

Trömel, G. and Schwerdtfeger, K.
EQUILIBRIA BETWEEN IRON-PHOSPHORUS MELTS AND LIME-FREE SLAG CONTAINING PHOSPHORUS. June 63.
Order from BISI £4 15s BISI-3221

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1963, v. 34 [no. 2] p. 101-108.

DESCRIPTORS: *Iron alloys, *Phosphorus alloys, Slags, Phosphorus compounds, Melting, *Chemical equilibrium, Crucibles, Sand, Aluminum compounds, Oxides, Magnesium compounds, Phosphates.

Zigel', O. D.
PECULIARITIES OF THE FORMATION OF BILLETS PRODUCED BY CONTINUOUS CASTING. Paper from the All-Union Conference on the Continuous Casting of Steel (no. 1) [17-19] Oct 55. [Apr 60] [18]p.
Order from OTS or SLA $1.60 62-14668

Trans. of mono. [Nepreryvnaya Razlivka Stali] (Continuous Casting of Steel) Moscow, 1956, p. 164-177.
Another trans. is available from OTS or SLA $1.60 as 62-25883, BISI-1614, Apr 60, [19]p.

DESCRIPTORS: *Steel, Casting, *Castings, Crystallization, Impurities, Mechanical properties, Quality control, *Austenite, Tracer studies.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 62. 27 May 63, 67p. 10 refs. JPRS: 19413.
Order from OTS $1.75 63-21920

Trans. of Razvedka i Okhrana Nedr (USSR) 1962 [v. 28] no. 2, p. 1-7, 30-34; Gornyi Zhurnal (USSR) 1963, no. 3, p. 13-15, 27-29, 37-40, 52-53, 65-66.

DESCRIPTORS: *Industrial production, *Metallurgy, Gold, *Ores (Metal sources), *Geophysical prospecting, *Mining engineering, Automation, Copper, Diamonds, Drills, *Boreholes, *Models (Simulations), *Remote control systems, Handling, Railroad cars, Lead, Zinc, Industrial plants.

Contents:
Inadequately explored gold-bearing conglomerates in the eastern part of the Soviet Union, by Yu. P. Ivensen and others
Geophysical methods used in the search and prospecting of ore deposits in the Noril'sk region, by I. D. Volkov and others
Achievements in the automation and mechanization of production at the Degtyarsk copper mine, by A. N. Shilin
Hydrotransportation and hydropumping of soil in preparing polygons for diamond mining, by S. V. Yudaev
Recommended method of ore cutting with small diameter boreholes as practiced at the Altyn-Topkan mine, by K. N. Petrov and I. G. Orlov
Modelling a mine from plexiglass, by B. V. Oleinikov
Remote-control of electrical locomotives at Zyryanovsk lead and zinc combine, by L. G. Smaglyuk.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 67. 24 June 63 [37]p. JPRS: 19820.
Order from OTS $1.00 63-31102

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 4, p. 8-18; Gornyi Zhurnal (USSR) 1963, no. 5, p. 5-8; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 2, p. 69-70; and 8 selected articles from 1963 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Minerals, Geological survey, Industrial plants, *Aluminum, Mining engineering, *Ores (Metal sources), *Copper, Synthetic stones, Diamonds, Geology, Scientific personnel, Engineering personnel, Water, Separation, *Cladding, Mechanical working, *Titanium alloys, Titanium, Nickel, Sheets, Metal plates, *Cermets, Castings, *Power metallurgy, Alloys, *Ultrasonic radiation, Excavators, Earth-handling equipment.

Contents:
Prospecting for minerals
Construction of Kirovabad aluminum plant, by V. Gabrielyan
Leninogorsk polymetal combine exceeds the plan in ore mining

Open pit mining of large copper deposit at Gaisk mining and beneficiation combine begins
Moscow synthetic diamonds
Awards to geologists and engineers for discovery of Talnakh copper-and-nickel deposit
Sumgait aluminum plant has exceeded the plan
Hydrometallurgical method of production of copper and the prospects for its development, by N. A. Milovidov
Rolling of titanium-aluminum, titanium-copper, and titanium nickel bimetallic sheets, by A. A. Dmitriev and others
Obtaining of cast alloys from non-alloyable components under the action of ultrasonic oscillations, by G. I. Pogodin-Alekseev and others
More metals for our country
In the Armenian Sovnarkhoz
Help rendered by the Unipromed' institute to non-ferrous metallurgy mines, by A. N. Shilin.

Bogatskii, D. P.
THE FUNDAMENTALS OF A NEW COMPLEX METHOD FOR THE CHEMICAL TREATMENT OF OXIDIZED NICKEL-COBALT ORES WITH EMPLOYMENT OF SULPHUROUS GAS. [1963] 15p. (figs. omitted) 12 refs.
Order from OTS or SLA $1.60 63-14098

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, p. 272-282.

DESCRIPTORS: *Ores (Metal sources), *Nickel, *Cobalt, *Oxides, Separation, *Sulfuric acid, *Gases, *Reduction (Chemistry).

There is proposed an experimentally-verified original method for the complex processing oxidized nickel-cobalt ores with employment of waste sulphurous gas according to the scheme: direct reduction followed by leaching with a weak solution of sulphuric acid. There is shown the high effectiveness of the proposed process, the possibility of its profitable practical realization, and of its applicability to ores of so low a grade that they have hitherto been rejected. There is recommended the employment of sulphurous gas for the production of the reagent-solvent. (Author)

Urazov, G. G.
TRANSFORMATIONS TAKING PLACE IN THE TERNARY SYSTEM COMPOSED OF SULPHUR, LEAD AND OXYGEN: DISCUSSION ON THE THEORY OF THE PROCESSING OF LEAD ORES BY THE METHOD OF INCOMPLETE ROASTING, AND OF THE SUBSEQUENT REACTIONS. [1963] 16p. 18 refs.
Order from OTS or SLA $1.60 63-14290

Trans. of Metallurg [Leningrad] (USSR) 1935, v. 10, no. 3, p. 27-37.

DESCRIPTORS: *Ores (Metal sources), Processing, *Lead, *Sulfur, *Oxygen, *Phase studies, Transformations, Chemical reactions.

Structural Metallurgy and Corrosion

Bastien, P. and Margerand, R.
RELATIONS BETWEEN THE α-PHASE OF COLD HARDENING AND MOTHER AUSTENITE IN LOW-CARBON 18-8 STEEL. [1963] 20p. 4 refs.
Order from SLA $1.60 63-14685

Trans. of Rev[ue de] Métallurg[ie]. Mémoires Scientifiques (France) 1959, v. 56, no. 5, p. 463-470.

DESCRIPTORS: *Steel, *Austenite, Hardening, Chromium alloys, Nickel alloys, Mechanical properties, *Metallography, Microstructure, *Cold-working, Annealing, Phase studies.

A method showing that the surface phase α and the α phase of cold-working are identical and have the same properties is described. The orientation relation of the transformation $\gamma \rightarrow \alpha$ is is confirmed. The inverse transformation is explained by the classical process of germination and growth. (Author)

Franke, E.
NONFERROUS METALS. Pt. 2 of Construction Materials for the Chemical Industry. [1962] 6p. (refs omitted).
Order from SLA $1.10 63-14350

Condensed trans. of Werkstoffe und Korrosion (West Germany) 1951 [v. 2] no. 7, p. 249-258.

DESCRIPTORS: *Reviews, *Corrosion, Metals, *Copper, Copper alloys, Nickel alloys, Chromium alloys, Zirconium, Titanium, Tantalum alloys, Molybdenum alloys.

A literature survey.

Franke, E.
STEEL AND IRON. Pt. 1 of Construction Materials for the Chemical Industry. [1963] 5p. (refs. omitted)
Order from SLA $1.10 63-14099

Condensed trans. of Werkstoffe und Korrosion (West Germany) 1951 [v. 2] no. 5, p. 173-181.

DESCRIPTORS: *Reviews, *Stainless steel, *Corrosion, Austenite, Chromium alloys, Steel, Iron alloys, Silicon alloys.

A literature survey.

Heydt, Günther.
THE PREVENTION OF SCALE FORMATION. [1963] 3p. 1 ref.
Order from SLA $1.10 63-16358

Trans. of Zucker (West Germany) 1950, v. 3, p. 240-241.

DESCRIPTORS: *Scale, *Corrosion inhibition, High frequency, *Electromagnetic fields, Heaters, Evaporators, *Pipes, Salts, Organic materials, Carbohydrates, Refineries, Boiler tubes.

Klotsman, S. M. and Orlov, A. N.
DIFFUSION MECHANISM ALONG GRAIN BOUNDARIES, tr. by Sergey Shewchuck. Oct 62 [10]p. 9 refs.
Order from OTS or SLA $1.10 UCRL Trans-888(L)

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1959, v. 4, p. 90-95.
Another trans. is available from OTS or SLA $1.60 as 62-13161, FRI Trans-152, 22 June 61 [13]p.

DESCRIPTORS: *Grain structures (Metallurgy), *Boundary layer, Diffusion, Structures, Mathematical analysis, Solid state physics.

The task of the report is to explain the effect, exerted by the presence of the transition region which can be described by the two-dimensional "nonius" model, on the process of intercrystal diffusion.

Krekel, P.
CORROSION DURABILITY AND NEW APPLICATION METHODS OF HELI-COIL THREAD INSERTS. [1963] [12]p. (figs. omitted) 2 refs.
Order from SLA $1.60 63-16472

Trans. of Aluminium (West Germany) 1962, v. 38, p. 718-721.

DESCRIPTORS: *Corrosion, *Corrosion inhibition, *Screw threads, Screws, Bolts, Steel, Aluminum alloys.

Krüger, Werner.
FEED-WATER CONTROL BY CONDUCTIVITY MEASUREMENTS. [1963] 12p. (figs. omitted).
Order from SLA $1.60 63-16360

Trans. of Zucker (West Germany) 1956, v. 9, p. 575-578.

DESCRIPTORS: *Feed water, Quantitative analysis, *Electrical conductance, *Carbohydrates, Boilers, Refineries, Corrosion inhibition, Boiler tubes.

It is shown that the feed-water control by conductivity measurement is a safe process for controlling the feeding of the boilers in the sugar industry.

Perret, Hugo.
ON THE CORROSION OF POTS THROUGH THE MELTING OF CAUSTIC SODA. [1963] [14]p. 4 refs.
Order from SLA $1.60 63-14249

Trans. of la Chimica e l'Industria (Italy) 1938, v. 20, no. 3, p. 133-136.

DESCRIPTORS: *Corrosion, *Sodium compounds, *Hydroxides, Melting, Cast iron, *Containers, Hydrogen, Chlorates, Oxidation, Chemical industry, Industrial equipment.

The diverse factors that are able to influence the corrosion of cast iron pots used for the melting of caustic soda, and particularly the defects of the metal, the action of the heat, and the chemical action, are studied.

Savitskii, E. M., Baron, V. V., and Efimov, Yu. V.
STRUCTURAL DIAGRAM OF VANADIUM-CERIUM SYSTEM. 18 Feb 63 [5]p. (figs. omitted) 4 refs.
FTD-TT-62-1761; AD-400 503.
Order from OTS or SLA $1.10 63-19303

Unedited rough draft trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 3, p. 701-703.

DESCRIPTORS: *Vanadium alloys, *Cerium alloys, Structural properties, Smelting, Microstructure, X-ray spectrum, Plasticity, Hardness.

Trifel', M.
EFFECTIVE MEANS OF COMBATTING METAL CORROSION. 10 Apr 63 [7]p. FTD-TT-62-1693.
Order from OTS or SLA $1.10 63-19420

Unedited rough draft trans. of Morskoi Flot (USSR) 1961 [v. 21] no. 7, p. 27-28.

DESCRIPTORS: *Corrosion inhibition, *Harbors, *Ship structural components, Protective treatments, *Plastic coatings, *Cathodic protection, *Corrosion-Resistant alloys, Paints, Metal films, *Metal coatings, Bitumens.

A survey of modern means of inhibiting corrosion on ships and harbor instillations.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly rept. 6, 1 Apr-30 June 62, on Contract 011-60-9 RDI. [1962] 31p. FN-E-26.
Order from OTS or SLA $2.60 EURAEC-405

Trans. of a rept. from FIAT, S. A., Turin (Italy) 31 July 62.

DESCRIPTORS: *Fission products, Gases, Dioxides, *Uranium compounds, Powders, Potassium compounds, Sulfates, *Reactor fuels.

Continued operation of the fission gas apparatus is reported. Radiation testing of 5 Mallinckrodt pellets, 3 C. E. A. pellets, and 1 swagged UO_2 sample is reported. Data obtained by the past irradiation technique involving sample-container drilling under vacuum, 6-hr diffusion aneal, and fusion with potassium pyrosulfate are tabulated.

[RESEARCH INTO THE] DIFFUSION OF FISSION GASES IN SOLIDS. Quarterly rept. no. 2 (2nd year) [no. 6] Oct-Dec 61, on Contract 064-61-8 RDD. [1962] 13p.
Order from OTS or SLA $1.60 EURAEC-250

Trans. of a rept. from Hahn-Meitner-Institut für Kernforschung, Berlin (West Germany) n. d.

DESCRIPTORS: *Fission products, *Argon, *Xenon, *Diffusion, Rare gases, Solids, *Potassium compounds, *Chlorides, Single crystals, Uranium compounds, Carbides, Thorium compounds.

The diffusion of argon in KCl monocrystals, measured between 400 and 700° C, is in accordance with theory. Interpretation is now in progress. In the case of UC45 the xenon released was observed to behave in a way which is not directly amenable to interpretation according to the diffusion theory. There is no appreciable change in this behavior after repeated irradiation and heating. It was possible to heat UC by high frequency in Ta tubes up to 1600° C without causing any changes, although with Al_2O_3 and ZrO2 it reacted with considerable release of rare fission gases. Tests were also carried out in ThO2 at very low temperatures (200 to 800° C). F. values of 2.10^{-4} to 7.10^{-3} were measured. For the purpose of determining the total activity of the rare fission gases, a reference sample of UO2 or ThO2 dissolved in solid potassium pyrosulphate is being irradiated, by way of innovation. The rare fission gases are released by melting the sample at 800° C in a vacuum. In view of the good results obtained, a second high-frequency heating apparatus has been constructed, with which a temperature of 2300° can be attained. (Author) (See also 62-33173)

[RESEARCH INTO THE] DIFFUSION OF FISSION GASES IN SOLIDS. Quarterly rept. no. 3 (2nd year) [no. 7] Jan-Mar 62, on Contract 064-61-8-RDD. [1962] 10p. EU-B-12.
Order from OTS or SLA $1.10 EURAEC-296

Trans. of a rept. from Hahn-Meitner-Institut für Kernforschung, Berlin (West Germany) n. d.

DESCRIPTORS: *Fission products, *Diffusion, *Argon, *Xenon, *Uranium compounds, *Thorium compounds, Oxides, Carbides, *Potassium compounds, Chlorides, Tantalum, Tungsten, *Reactor fuels.

A high-vacuum apparatus was built for the high-frequency heating of one or two samples simultaneously to over 2000° C and successfully tested with UO2, UC and ThO2 crystals. The argon diffusion tests with KF and KCl monocrystals were systematically pursued and evaluation completed by means of the Siemens digital computer. Compacted KCl tablets displayed the same behavior as that observed in other polycrystalline ma material, i. e. rare gas is given off continously when the temperature is increased. The UO2 monocrystalline balls supplied by Euratom were heated at 10^{-3} torr. to 1710° C without any change in form. The UC45 tests were concluded. The UC tests showed that tantalum does not react with UC below 1800° C but that above this temperature it must be replaced by tungsten. Xenon release follows the theoretical pattern, but part of the xenon is released spasmodically between 900° and 1400° C when the sample is subjected to the first temperature rise. (Author) (See also 63-15061)

Ivanov, V. E., Kruglykh, A. A. and others.
DETERMINATION OF THE VAPOR TENSION OF URANIUM COMPOUNDS. [1962] 10p.
Order from OTS or SLA $1.10 AEC-tr-5501

Trans. from mono. [International Atomic Energy Agency] Symposium on the Thermodynamics of Nuclear Materials, Vienna, 21-25 May 62. [Proceedings] paper SM-26/60.

DESCRIPTORS: *Uranium compounds, Vaporization, Surface tension, Evaporation, Sublimation, Numerical analysis, Thermodynamics.

Vapor tension was determined on the basis of the rate of evaporation from cylindrical crucibles, the 1/r of which was greater than ten. If a metal is evaporated from two cylindrical crucibles with different 1/r ratios, but the evaporation is carried out at the same temperature, the numerical value of a can be determined according to the following formula:

$$a = \frac{G_{1/S_1} - G_{2/S_2}}{G_{2/S_2}\left(\frac{1}{W_2} - 1\right) - G_{1/S_1}\left(\frac{1}{W_1} - 1\right)}$$

We determined by this method the dependence of the vapor tension of silver on the temperature. The values obtained by us were in good agreement with those published in the literature. (Author)

Midler, A.
LIGHT-ACCELERATOR. 11 Mar 63 [3]p.
FTD-TT-63-20; AD-400 305.
Order from OTS or SLA $1.10 63-19161

Unedited rough draft trans. from Izvestiya (USSR) 1962, 24 Oct, p. 5.

DESCRIPTORS: Accelerators, *Light, *Particle accelerators.

It is possible to construct an accelerator on light waves. Such an idea came up for the first time. Its authors Soviet physicists prof. Andrey Kolomenskiy and cand. of Phys. Math Sc. Andrey Lebedev. The scientists made the following experiment. They ran a powerful beam of light into the interior of a long coil with current. The light travelled along the axis of the coil, and into here was also let in a stream of charged elementary particles. Before the scientists originated a curious picture. The particles in the interior of the coil began moving in tact with the light waves. The light began accelerating same. The experimentors assume, that in this way the beam of light is capable of accelerating particles to very high velocities. Soviet scientists proposed to utilize the new physical effect in acceleration technique. In their opinion this is principally possible. In this way, is opened the possibility of constructing original accelerators, working on a powerful beam of light. They will not be similar to modern devices and will be free of many deficiencies. The scientists assume, that this phenomenon can also be utilized for amplification of radio waves of various ranges. (Report quoted in its entirety)

Starik, I. E., Ratner, A. P. and others.
USE OF PHENYLARSONIC ACID TO SEPARATE NEPTUNIUM AND PLUTONIUM, tr. by B. C. L. Salman. June 61 [8]p. 4 refs. NP-tr-741.
Order from OTS or SLA $1.10 63-23287

Trans. of Radiokhimiya (USSR) 1959, v. 1, no. 5, p. 545-547.

DESCRIPTORS: *Radiochemistry, *Neptunium, *Plutonium, Separation, Chemical precipitation, *Sequestering agents, Zirconium compounds, *Arsonic acids, Reduction (Chemistry), Amines, Hydroxides, Hydrazines.

A method for the quantitative separation of neptunium and plutonium is described, based on the co-precipitation of neptumium with zirconium phenylarsonate under conditions which reduce the plutonium to the trivalent state. (Author)

Vargin, V. V. and Stepanov, S. A.
EFFECT OF GAMMA IRRADIATION ON Na_2O-Al_2O_3-SiO_2 GLASSES (Deistvie γ-Radiatsii na Stekla Sistemy My Na_2O-Al_2O_3-SiO_2) tr. by C. E. Stevenson. 22 Jan 63 [5]p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5616

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 147, no. 3, p. 609-611.

DESCRIPTORS: *Glass, Silicon compounds, Dioxides, Aluminum compounds, Sodium compounds, *Gamma rays, *Radiation damage, Absorption spectrum.

Nuclear Engineering

FABRICATION OF UO2 AND UO2BeO MIXED PELLETS. Final rept. Project 164, 15 Dec 60-30 Apr 62, on Contract 015-60-9 RDA. [1962] 21p.
Order from OTS or SLA $2.60 EURAEC-369

Trans. of a rept. from Battelle-Institut e. V., Frankfurt-am-Main (West Germany) 28 June 62.

DESCRIPTORS: *Reactor fuels, Synthesis, Dioxides, Oxides, *Uranium compounds, *Beryllium compounds, Thermal conductivity, Thermal expansion, Sintering.

Research work devoted to fabrication of UO_2 and BeO-UO_2 sintered particle systems is described. Properties of these fabrications such as thermal expansion up to 1100°C and thermal conductivity at 800° to 1100°C were also investigated. Results show that thermal conductivity increases with increase in BeO content. A functional dependence of thermal expansion on BeO content was not established.

GENERAL FEATURES OF THE PROJECT RAPSODIE (Vue d'Ensemble sur le Projet Rapsodie). [1962] [28]p.
Order from OTS or SLA $2.60 AEC-tr-4550

Trans. of excerpt from a rept. pub. by Commissariat à l'Énergie Atomique, France, n. d.

DESCRIPTORS: *Nuclear reactors, Reactor fuels, Reactor cores, Reaction reflectors, Reaction shielding materials, Reactor coolants, Reactor safety systems, Buildings, *Reactor system components, Fast reactors, Test reactors.

RAPSODIE, the name of which evocates the combination of fast neutrons with sodium, will be a fast neutron experimental pile cooled by sodium. It is supposed to provide real experience for the construction and operation of this type of pile, experience which will provide the means for ultimately realizing other piles of the same type, but of industrial character, using the plutonium provided by the natural uranium plants, which themselves produce nuclear energy and fuel. The characteristics of project RAPSODIE are reported. (Author)

STATISTICAL METHODS FOR HOT CHANNEL AND HOT SPOT CALCULATION. Quarterly rept. 5, 1 Jan-31 Mar 62, on Contract 035-60-11 RDI. [1962] 35p. FN-E-20.
Order from OTS or SLA $3.60 EURAEC-333

Trans. of a rept. from FIAT, S. A., Turin (Italy) 30 Apr 62.

DESCRIPTORS: *Reactor fuels, *Reactor cores, *Statistical analysis, Coding, Hydraulic systems, Pressure, Temperature, Enthalpy.

Codification of the SHOC code on the IBM-7090 was completed. Comparison between results obtained with the statistical "spot" model and the current conservative method involving the maximum allowable deviations was initiated. Data obtained by inspection of the Yankee Critical Experiment fuel rods on material variation characteristics were used for input. These data are standard deviations and mean values of pellet radius, internal and external cladding radius, fraction of theoretical density, and atomic % enrichment. Preliminary results indicate a strong reduction of the correction factor relative to enthalpy rise, in comparison with the value obtained by considering the maximum allowable deviations for the entire channel. A general dependence for the correction factor on the channel neutron flux distribution was also found. Results of a study concerning a typical hot channel correction factor relative to the enthalpy ($F^{\Delta H}$) rise are included.

Gerasimov, V. V., Gromova, A. I. and others.
AN AUTOCLAVE FOR ELECTROCHEMICAL INVESTIGATIONS, tr. by Marcel I. Weinreich. 21 July 61 [10]p. 1 ref.
Order from OTS or SLA $1.60 SCL-T-372

Trans. of mono. Avtoklav dlya Elektrokhimicheskikh Issledovanii, Moscow, 1960, 8p.

DESCRIPTORS: *Pressure vessels, Design, *Electrochemistry, Reactor materials, *Corrosion research.

Kroll, H., ed.
FABRICATION OF SWAGED FUEL ELEMENTS. Quarterly rept. 8, 1 Apr-30 June 62, on Contract 062-61-7 RDD. [1962] 33p.
Order from OTS or SLA $3.60 EURAEC-372

Trans. of a rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) n. d.

DESCRIPTORS: *Reactor fuel elements, Fuel elements, *Uranium compounds, *Dioxides, Powder metallurgy, Reactor fuel cladding, Melting, Vibration, Tests, Tools, Mechanical working, Material forming.

Topics include: UO_2 melting (Fabrication of G powder); cladding material; pre-compacting by vibration; swaging tests; and tests on the swaged fuel element (O/U ratio; density measurements, metallographic investigations, heat conductivity measurements).
(See also EURAEC-323)

Schmets, J. and Speeckaert, Ph.
REPROCESSING IRRADIATED FUELS: TRIP REPT--ARGONNE, BROOKHAVEN, OAK RIDGE, NEW YORK, NOV-DEC 61. Special rept. 3, Nov-Dec 61, on Contract 049-61-4 RDB. [1962] 11p.
Order from OTS or SLA $1.60 EURAEC-298

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n.d.

DESCRIPTORS: *Reactor fuels, *Reactor fuel processing, Chlorination, Fluorination.

PHYSICS

JOURNAL OF APPLIED MECHANICS AND TECHNICAL PHYSICS, 1962, NO. 2: SELECTED ARTICLES. 3 May 63 [71]p. 70 refs. FTD-TT-62-1778.
Order from OTS or SLA $7.60 63-19636

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 2, p. 3-13, 20-31, ##50-58, ##110-112.
##Another trans. of p. 50-58 is available from ICE in v. 2, no. 4, $15.00; and an abstract trans. of p. 110-112 from OTS or SLA $1.10 as 62-32112, AID-62-89, 29 June 62, 4p.

DESCRIPTORS: *Applied mechanics, *Physics, *Magnetohydrodynamics, *Plasma physics, *Energy conversion, Dynamics, *Electric currents, Ionization, Electrical conductance, Combustion mixtures, Diffusion, Convection, Heat transfer, Underwater explosions, Energy, Distribution.

Contents:
Conversion of kinetic energy of a stationary plasma stream into electricity with isothermal retardation of the stream in a transverse magnetic field, by V. M. Sarychev
Generation of electric current by a plasma flowing in a tube, by E. I. Andryankin
Thermal ionization and electric conductivity of some combustion mixtures and products, by G. S. Aravin and V. P. Shevelev
##Influence of the diffusion of radiating impurities on convective heat exchange, by A. N. Rumynskii
##Effect of rate of heat release in electric explosions in water on the distribution of the explosion energy, by M. I. Vorotnikova.

JOURNAL OF ENGINEERING PHYSICS, 1963, VOL. 6, NO. 2: [SELECTED] TRANSLATIONS. 17 June 63, 258p. 156 refs. JPRS: 19701.
Order from OTS $4.00 63-31047

Trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1963, v. 6, no. 2, p. 3-138.

DESCRIPTORS: *Physics, *Engineering, *Heat transfer, Viscosity, *Fluid flow, *Thermodynamics, Boiling, Water, Jet flames, Temperature, Turbine blades, Moisture, Clay minerals, Metallurgy, Compressible flow, Turbulence, Electrodes, Differential equations, Thermal conductivity, Elasticity, Stresses, Gas flow, Ethanes, Electric fields, Anisotropy, Electric furnaces, Thermal stresses, Thermal insulation, Conferences, Chemical engineering.

Experimental investigation of heat transfer and critical thermal loads in boiling water under conditions of free movement, by V. S. Golovin and others
Consideration of heat exchange and the relationship of viscosity to temperature in the problem of the flow of a viscous liquid between two rotating concentric cylinders, by S. K. Aslanov
An investigation of the influence of the diameter of a pipe on the size of the critical thermal load for boiling water, by R. A. Rybin
Measurement of the temperature of an arc jet, by E. V. Garkavyi
Fluctuations of temperature and thermal stresses in a turbine blade during periodic changes of gas temperature, by E. P. Plotkin and E. I. Molchanov
The study of the mechanism of moisture transfer in the drying of colloidal capillary-porous bodies, by N. V. Churaev
The influence of the mineralogical composition of argillaceous soils on their properties, by N. Ya. Kharkhuta and Yu. M. Vasil'ev
The breakdown of heated metals and alloys in an air stream at supersonic velocities, by L. Ya. Nesgovorov and V. I. Prosvirin
The effect of transverse mass flow on the resistance and heat exchange associated with the turbulent flow of a compress gas, by P. N. Romanenko and V. N. Kharchenko
Performance of porous electrodes in a diffusion process of reagent supply, by V. S. Bogotskii and I. G. Gurevich
Electrical analogue solution, by ohmic resistance circuits, of the system of differential equations for heat and mass transfer, by L. A. Kozdoba
Transitional heat conductivity in multi-layered media. II. Double-layered systems and the determination of minimum heating time for a system of a given heat capacity, by I. S. Zaidenman and G. F. Muchnik
On the heat conductivity of an unlimited flat wall, by A. F. Khrustalev
Temperature waves in elastic strains, by V. S. Khimenko
The anisothermal flow of real gas in a gas pipeline, by B. V. Shalimov
Concerning the fields of a turbulent flow velocity in a cyclone chamber, by V. A. Schwab
A study of the kinetics of thermal decomposition of ethane by the single-pulse shock-tube method, by V. G. Knorre and G. I. Kozlov
The effect of an electrical field on a continuous liquid jet, by A. A. Semerchan and others
Thermal mass exchange in anisotropic bodies, by N. I. Gamayunov
Similarity and modeling conditions of arcless electrosmelting processes, by G. S. Nus
Thermal stresses and heat release in rectangular cross-section units, by A. S. Trofimov
Concerning the critical diameter of spherical thermal insulation, by E. A. Sidorov
International congress of chemical engineering (no. 1) (CHISA) Brno, Sep 62, by A. S. Ginsburg.

JOURNAL OF PHYSICS, 1959, NOS. 4, 6-7; 1960, NO. 8; 1961, NOS. 1-3: TABLE OF CONTENTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, Physics 3, on Contract AF 19(604)8505. Sep 62 [31]p. Emmanuel Coll. Research Language Center rept. no. Phys. 3
Order from OTS or SLA $2.60 63-15754

Trans. of table of contents of Wu Li T'ung Pao (Chinese People's Republic) 1959, nos. 4, 6-7; 1960, no. 8; 1961 nos. 1-3.

DESCRIPTORS: *Physics, Periodicals, Indexes, *China.

Arifov, U. A., Ayukhanov, Kh. A., and Aliev, A. A.
ON ANGULAR DISTRIBUTION OF IONS OF ALKALI ELEMENTS, DIFFUSED BY THE SURFACE OF METAL. 18 Feb 63 [14]p. 16 refs. FTD-TT-62-1719.
Order from OTS or SLA $1.60 63-19203

Unedited rough draft trans. of Akademiya Nauk Uz[bekskoi] SSR [Tashkent]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1961, no. 6, p. 57-64.

DESCRIPTORS: *Alkali metals, *Sodium, Ions, Scattering, Distribution, Secondary emission, Weight, Energy, Measuring devices (Electrical and electronic), Circuits, *Particle accelerator targets, *Tantalium, Metals, Surfaces, Graphic analysis.

When the mass of the bombarding ions m_2 is lower than the mass of target atoms m_1, the distribution of scattered ions by angles coincides closely with the cos graph. Distribution of intensity of scattered ion by angles in the investigated range of energies of primary ions under condition when $m_2 < m_1$ does not depend upon the energy of the bombarding ions and temperature of the target. At all angles of incidence of the primary beam on the target the distribution of intensity of scattered ions by angles coincides with cos graph. With the increase in angle of incidence of primary ions the coefficient of secondary scattered ions K_n increases. (Author)

Emin, Irving.
RUSSIAN-ENGLISH PHYSICS DICTIONARY. 1963, 554p.
Order from John Wiley & Sons, Inc., 605 Third Ave., New York, 16, N. Y. $14.00

DESCRIPTORS: *Dictionaries, *Physics, *Mathematics, Documentation.

Kastler, A.
OPTICAL METHODS OF RADIO FREQUENCY RESONANCE (Les Methodes Optiques de la Resonance Hertzienne) tr. by D. A. Sinclair. 1963, 23p. 79 refs. NRCC Technical Trans. 1063.
Order from NRCC $1.50 NRCC C-4337

Trans. of Nuovo Cimento. Supplemento (Italy) 1957, no. 3, p. 1148-1167.

DESCRIPTORS: *Radiofrequency, *Resonance, *Optics, Magnetic resonance, Hyperfine structure, Atoms, Excitation, Detection, Electric moments, Paramagnetic resonance.

Khalatnikov, I. M.
NEW INVESTIGATIONS ON THE PHYSICS OF LOW TEMPERATURES. 12 Feb 63 [6]p. FTD-TT-62-1715; AD-299 644.
Order from OTS or SLA $1.10 63-19576

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 2, p. 111-112.

DESCRIPTORS: *Low temperature research, *Physics, Semiconductors, Metals, Superconductivity, Electrical conductance, Antiferromagnetism.

A summary of researches reported at the VIII annual conference on physics of low temperatures held during October 1961 in Kiev.

Acoustics

SOUND INSULATION REQUIREMENTS FOR ENCLOSING STRUCTURES (Trebovaniya k Zvukoizolyatsii Ograzhdayushchikh Konstruktsii) tr. by G. L. Cairns. Dec 61 [5]p. Library Communication no. 1078; DSIR NLL M. 6004.
Order from OTS or SLA $1.10 62-25915

Trans. of mono. Stroitel'nye Normy i Pravila, v. 2 [Normy Stroitel'nogo Proektirovsniya] [Structural Standards and Regulations, pt. 2: Standards for Structural Design, Moscow] 1954, sect B, chap. 4, p. 169-171.

DESCRIPTORS: *Acoustic insulation, Structures, *Buildings, Air, Acoustic properties, Floors, Floor coverings, Sound transmission, Sound, Construction.

Migai, V. K.
INVESTIGATING FINNED DIFFUSORS. 3 Apr 63 [11]p. 5 refs. FTD-TT-63-86. AD-402 582.
Order from OTS or SLA $1.60 63-19340

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 10, p. 55-59.

DESCRIPTORS: *Diffusers, Fins, Design, Acoustic properties, Resonance, Fluid flow, Velocity.

Presented are results of experimentally investigating the effect of various geometric parameters on the effectiveness of a finned diffusor. (Author)

Pisarevskii, N. N.
AN ELECTRONIC CORRELOGRAPH FOR ACOUSTIC MEASUREMENTS. [1962] [17]p. 2 refs. [DSIR] NLL M. 8911.
Order from OTS or SLA $1.60 63-15167

Trans. of Promys[hlennaya] Aerodinamika (USSR) 1960, no. 18, p. 65-79.
Another trans. is available from OTS or SLA $7.60 in 63-13686, FTD-TT-62-696, 15 Nov 62 [71]p.

DESCRIPTORS: *Acoustic equipment, Analog computers, Design, *Sound signals, *Correlation techniques, Statistical functions, Electronic equipment.

Electricity and Magnetism

Dietrich, Isolde and Honrath-Barkhausen, Marlene.
FORMATION ON ELECTRIC CONTACTS OF RESISTANCE-INCREASING LAYERS OF ORGANIC ORIGIN (Zur Bildung Widerstandserhöhender Beläge Organischen Ursprungs auf Elektrischen Kontakten). [1963] [18]p. (foreign text included) 3 refs.
Order from SLA $1.60 63-16308

Trans. of Zeit[schrift] für Angewandte Physik (West Germany) 1959, v. 11, no. 10, p. 399-403.

DESCRIPTORS: *Films, Resistance (Electrical), *Organic compounds, Organic coatings, Naphthalenes, *Electric switches, Sliding contacts, Electric currents, Electric discharges, Tracer studies, Vapors, Copper, Gold, Gold alloys, Indium, Indium alloys, Iron alloys, Iridiun, Nickel, Palladium, Platinum, Platinum alloys, Rhodium, Ruthenium, Silver, Silver alloys, Tungsten, Oxides, Adsorption, Measurement.

Use was made of naphthalene-tagged with C^{14} by means of a beta beam generator in order to follow the formation of resistance-increasing films traceable to disintegration of organic substances on the point of the contact, due to the activation of the contact. It became evident that black films during contact making without current are created only on platinum metals and their high-percentage alloys, but during contact making with current, on all noble metals including copper. Adsorption tests made to clarify this phenomenon showed no preferred naphthalene adsorption on platinum metals. (Author)

Hasing, J.
PHOTO-ELECTRIC PROPERTIES OF SOLUTIONS OF SODIUM IN LIQUID AMMONIA. [1963] 33p. 21 refs.
Order from SLA $3.60 63-14691

Trans. of Annalen der Physik (Germany) 1940, ser. 5, v. 37. p. 509-533.

DESCRIPTORS: *Sodium, *Ammonia, Solutions, *Photoelectric effect, Photoelectric cells, Electrical properties, Magnetic properties, Optical properties, Electric currents, *Measuring devices (Electrical and electronic), *Quantum mechanics, Electrons, Photons, Spectroscopy.

An apparatus is described with which the external photoelectric effect can be measured in spectrally decomposed light on sodium ammonium solutions. From the spectral distribution of the quantum yield, a determination was made of the longwave boundaries and the work functions for different concentrations. They extend from 773 to 870 mμ, or 1.60 to 1.42 eV. Quantum yield and work function lead to the conclusion, by comparison with alkali metals, that they are concentrated solutions with a surface effect produced by free electrons. However, in dilute solutions, there is predominantly a volume effect which originates from lightly bound electrons in the interior of the solution. (Author)

Vonsovskii, S. V., ed.
FERROMAGNETIC RESONANCE: TABLE OF CONTENTS, tr. by A. Pingell. 5 June 63, 4p.
N R L Trans. no. 939.
Order from OTS $0.50 63-11642

Partial trans. of mono. Ferromagnitnyi Rezonans: [Yavlenie Rezonansnogo Poglosheniya Vysokochastotnogo Elektromagnitnogo Polya v Ferromagnitnykh Vestchestvakh] Moscow, 1961, 343p.

DESCRIPTORS: *Ferromagnetism, *Resonance, Indexes.

(See also 63-14468; 63-14469

Zatsepin, N. N.
MAGNETOMETER. 28 Mar 63 [4]p. FTD-TT-62-1874.
Order from OTS or SLA $1.10 63-19480

Unedited rough draft trans. of Russian patent 144, 546, 1960, appl. no. 676, 266/24, 12 Aug 60.

DESCRIPTORS: *Magnetometers, Design.

The invention describes a magnetometer designed on the type of a magnetic probe, consisting of a rectangular rod of material with great initial magnetic penetrability, provided with a magnetizing winding of AC, which is distinguished by the fact that for the purpose of increasing the sensitivity of the magnetomer a probe is included in a through opening of the central rod of a closed three-rod core, made, for example of magneto-dielectric and provided with a measuring coil. (Author)

Electronics

ELECTRONICS EXPRESS, 1963, VOL. 5, NO. 5. 1963, 40p.
Order from International Physical Index, Inc., 1909 Park Ave., New York, 35, N. Y. $57.50/year

Comprehensive digest of current Russian literature dealing with electronic topics.

DESCRIPTORS: *Abstracts, *Electronics, *Communication systems, Television communication systems, Radar signals, *Circuits, Amplifiers, *Propagation, *Antennas, *Wave transmission, Electrical impedance, *Electron tubes, *Microwave equipment, Noise (Radio), Masers, Waveguides, *Solid state physics, *Semiconductors, Transisters, Measuring devices (Electrical and electronic), *Space communication systems, Extraterrestrial radio waves, Radio astronomy.

RADIO ENGINEERING AND ELECTRONIC PHYSICS, 1962, NO. 9, P. 1381-1572. 1962, lv.
Order from IEEE $57.00 ($28.50 to individuals)

Trans. of Radiotekhnika i Elektronika (USSR) 1962, v. 7, no. 9.

DESCRIPTORS: *Radio equipment, *Engineering, *Electronics, *Field emission, *Electric fields, Semiconductors, Dielectrics, *Cathodes (Electron tubes), *Thermionic emission, Tracer studies, Photoelectric materials, *Secondary emission, Tungsten, Oxygen, Alloys, Thorium, Niobium, Alkaline earth metals, Gold, Barium, Tellurium, Cesium, Sodium, Sputtering, Stainless steel, Space charges, Electric discharges, Cold cathode tubes.

Ivanchenko, V. A.
APPLICATION OF THE LANGMUIR PROBE METHOD FOR INVESTIGATING DEIONIZING PLASMA. 20 Feb 63 [14]p. 3 refs. FTD-TT-62-1734; AD-299 650.
Order from OTS or SLA $1.60 63-19210

Unedited rough draft trans. of Nauchno-Issledovatel'skii Institut Postoyannogo Toka. Izvestiya (USSR) 1961, v. 7, p. 5-13.

DESCRIPTORS: *Plasma physics, *Probes (Electromagnetic), *Electrons, Distribution, Electrodes, Instrumentation, Errors, Temperature, Density

Topics include: Conditions of utilizing probe characteristics for investigating a deionizing plasma; error in determining the plasma potential; error in determining the electron temperature; and, obtaining probe characteristics of a periodically onsetting deionizing plasma.

Pyt'eva, M. B. and Dubinina, E. M.
STUDY OF THERMAL ELECTRON EMISSION FROM A HOLLOW CATHODE. 13 May 63 [14]p. 5 refs. FTD-TT-63-367.
Order from OTS or SLA $1.60 63-19633

Unedited rough draft trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1962, v. 26, no. 11, p. 1343-1348.

DESCRIPTORS: Electron guns, *Cathodes, Thermionic emission, *Electron beams, Electrical properties, Electron density, Electric potential, Geometric forms, Measurement.

It is shown that electrons, after emergence from the aperture, possess little scattering with respect to velocity. The edge of the beam originates at the edge of the aperture; the inner parts of the beam originate from the emission of the sections of the surface of the upper base of the cavity more distant from the aperture; the central parts originate from the lateral surfaces. When anode voltages exceed 260 volts, emission from the edge of the aperture is saturated. Within the range of voltages studied ($50 \leq V_A \leq 1000$ v) the current from the regions of the upper base of the cathode cavity located at a distance from the aperture greater than the radius of the aperture, and the current from the lateral surface, are bounded by a space charge. The saturation of current from the regions indicated does not proceed at the same time. The boundary of the region of saturation migrates. Variation of the geometric parameters of the cavity, namely its shape and the relationship of the dimensions, may produce a certain change in the structure of the beam. (Author)

Molecular Physics and Spectroscopy

Baroin, M.
SPECTROSCOPY: POSITIONS AND INTENSITIES OF THE ABSORPTION BANDS IN THE NEAR INFRARED OF PHENOL DERIVATIVES. [1963] 2p.
Order from SLA $1.10 63-14140

Trans. of [Academie des Sciences, Paris]. Comp[tes] Rend[us] (France) 1947, v. 224, p. 821-822 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Spectroscopy, *Phenols, Cresyl radicals, Methyl radicals, *Halohydrins, Chlorides, Bromides, Absorption spectrum, V band, *Infrared spectroscopy.

With the aid of a spectrograph registering by means of mirrors with a thermoelectric cell joined to a Zernicke galvanometer as receiver, the first harmonic at 1.4u of the fundamental vibration of the OH group and occasionally the second harmonic at .96u were studied.

Girard, A.
[THE GRILL SPECTROMETER]. [1962] 2p.
Order from OTS or SLA $1.10 63-15905

Trans. of Applied Optics (U. S.) 1962, v. 1, no. 3, p. 267-268.

DESCRIPTORS: *Spectrum analyzers, Design, Operation.

Gobrecht, H.
THE OPTICAL ABSORPTION SPECTRUM OF THULIUM SULFATE. [1961] [7]p. 9 refs.
Order from SLA $1.10 61-20209

Trans. of Ann[alen] der Physik (East Germany) 1950, ser. 6, v. 7/8, p. 88-92.

DESCRIPTORS: *Thulium compounds, *Sulfates, Rare earth compounds, *Ultraviolet spectroscopy, Absorption spectrum.

Kozyreva, E. F.
THE PROBLEM OF THE MECHANISM OF INTERACTION OF THE PARTICLES IN A DISCHARGE PLASMA. [1963] [7]p. 7 refs. TIL. T. 5210; [DSIR NLL] M. 3676; AD-262 546.
Order from OTS or SLA $1.10 63-23116

Trans. of Optika i Spektrosk[opiya] (USSR) 1957, v. 2, no. 1, p. 43-48.

DESCRIPTORS: Particle spectra, *Electric discharges, Alternating current, Charged particles, Electrons, Particle trajectories, Shock (Mechanics), Statistical processes, Theory, *Spectrographic analysis, *Plasma physics.

By means of experimental examination of the relation of the half-widths of spectral lines to the concentration of electrons, the presence is indicated of two mechanisms (shock and statistical) of interaction among the particles in an A.C. are discharge at atmospheric pressure. (Author)

Preobrashenskii, N. G.
ON THE EVALUATION OF THE INFLUENCE OF THE REABSORPTION EFFECT ON THE INTENSITY OF SPECTRAL LINES. 23 Apr 63 [18]p. 47 refs.
FTD-TT-63-257.
Order from OTS or SLA $1.60 63-19521

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 6, p. 57-65.

DESCRIPTORS: *Plasma physics, Atoms, Electrons, Emissivity, Ionized gases, Absorption spectrum, *Line spectrum, Standards, Barium, Zinc.

Relationships were obtained which enable one to establish limit concentrations of atoms in plasma, below which distortions introduced into the integral intensity of a spectral line, as a result of its reabsorption, are known not to exceed 2%. Conditions are systemized for lowering the influence of the reabsorption effect, and a discussion is given of the results of some work done for revealing the mechanism of the excitation of the atoms taking into consideration the earlier unwarrantedly ignored secondary processes. (Author)

Reitz, A. M.
THE 5-MEMBER RING, PT. 3 A: POLARIZATION MEASUREMENTS ON PYRROLE, FURAN, THIOPHENE. Communication 63 on the Raman Effect. [1962] 31p.
Order from K-H $38.75 K-H-5147 c

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (Germany) 1937, v. 37B, p. 375-[391].

DESCRIPTORS: *Raman spectroscopy, *Thiophenes, *Furan, *Pyrroles, Polarization, Stereochemistry.

Shimiya, K., Toryu, T., and Sakamoto, H.
APPLICATION OF PERSISTENT INTERNAL POLARIZATION TO RADIOGRAPHY, I. [1963] 8p.
Order from ATS $12.75 ATS-69Q67J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 13-17.

DESCRIPTORS: *Radiography, *Polarization.

Optics

Sokolov, S. Ya.
ULTRASONIC MICROSCOPE [Ul'trazvukovoi Mikroskop]. [1963] 5p. (figs. omitted) 3 refs.
Order from OTS or SLA $1.10 63-14846

Trans. of Akad[emiya] Nauk [SSSR]. Doklady, 1949, v. 64, no. 3, p. 333-335.
Another trans. is available from SLA as RT-1218, 6p.

DESCRIPTORS: *Ultrasonic radiation, *Microscopes, *Ultrasonic equipment, Piezoelectric crystals, Design.

Yavorskii, B. M.
PRINCIPLE OF THE MOLECULAR AMPLIFIER AND GENERATORS OF COHERENT LIGHT. 1 Apr 63 [14]p. 13 refs. FTD-TT-62-1822; AD-402 436.
Order from OTS or SLA $1.60 63-19469

Unedited rough draft trans. of Svetotekhnika (USSR) 1962 [v. 8] no. 2, p. 1-5.

DESCRIPTORS: *Masers, *Lasers, *Light, Electromagnetic waves, Amplifiers, Photoemission, Absorption.

A review of the development of masers and lasers and the principles upon which they are based.

Solid State Physics

DIELECTRICS: [CONTINUATION]. 31 May 63, 11p. JPRS: 19519.
Order from OTS $0.50 63-21969

Trans. of Radio, Moscow (USSR) 1963, no. 4, p. 55-58.

DESCRIPTORS: *Dielectrics, Dielectric properties, *Electric insulation, *Plastics, Ceramic materials, Mica, Glass, Rubber.

Electrical, physical, and thermal characteristics are given for plastic, ceramic, mica, glass, and electrical-insulation stock materials.

Boer, K. W. and Lubitz, K.
THE CONTACT PROBLEM ON CdS SINGLE CRYSTALS. [1963] 11p.
Order from ATS $13.75 ATS-45Q69G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1962, v. 17a, no. 5, p. 397-405.

DESCRIPTORS: *Single crystals, *Cadmium compounds, *Sulfides, Solid state physics.

Fischer, E. W. and Richter, R.
STRUCTURAL CHANGES OF VAPOR-DEPOSITED Ge LAYERS IN THE ELECTRON MICROSCOPE. [1963] [32]p. 19 refs.
Order from SLA $3.60 63-14689

Trans. of Annalen der Physik (East Germany) 1955, ser. 6, v. 16, no. 5/8, p. 193-209.

DESCRIPTORS: *Germanium, *Vapor plating, *Crystallization, *Twinning (Crystallography), Grain structures (Metallurgy), *Electron microscopy, Electron beams, Radiation effects, Microphotography.

Amorphous vapor deposited Ge layers may be structurally changed in the electron microscope under the influence of the imaging electron beam. Depending on the experimental conditions, the following changes are possible: (1) conversion: amorphous → finely crystalline; (2) collective crystallization; (3) twin formation;

(4) crystallization from the vapor phase. These structural changes were investigated with the Siemens-Supermicroscope (Üm 21, early construction). A minature camera built into the plate lock of the microscope, was used for photographic reproduction of the individual phases. The twin elements were determined not only by means of the usual brightfield photographs of the Ge layers, but also by means of combination photographs consisting of a shadow image and a diffraction image. Using a suitable evaluation method, it was shown that twin formation exists in collectively crystallized Ge layers, in which the (111)-plane appears as twinning plane. (Author)

Hoppe, W. and Berkl, E.
A TAPE-CONTROLLED X-RAY DIFFRACTOMETER FOR THE AUTOMATIC MEASUREMENT OF THE X-RAY INTENSITIES OF SINGLE CRYSTALS. [1963] 14p. 2 refs.
Order from SLA $1.60 63-14745

Trans. of Z[eitschrift für] Angew[andte] Phys[ik] (West Germany) 1962, v. 14 [no. 7] p. 434-437.

DESCRIPTORS: *X-ray diffraction analysis, *Crystals, *Single crystals, Diffraction, Meters, Scintillation counters, Operation.

The geometry of the diffractometer permits measurement of all reflections in a reciprocal hemisphere by means of one crystal adjustment. The input of the angle values is registered on a paper tape; the values are fed as complements into the two electronic counters (electric timer and scintillation counter). The movement of the angle adjustment is achieved by stepping motors whereby a light chopper mounted on a motor axis will supply counting pulses until the counter is filled up. The simultaneous counting in both counters will give a high accuracy and provide a continuous check on the electronic counters (by coincidence switching). The measurement itself is carried out with a scintillation counter by the scanning method. The apparatus will automatically determine its measuring region. (Author)

Korsunskii, M. I., Pastushuk, N. S., and Mokhov, G. D.
KINETICS OF PHOTOCONDUCTIVITY OF LAYERS OF AMORPHOUS SELENIUM TREATED WITH MERCURY VAPOR. [1963] 11p. 5 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R39. When supply is exhausted, order from OTS or SLA $1.60, 63-16547

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 4, p. 167-172.

DESCRIPTORS: Dynamics, *Photoconductivity, Glass, *Selenium, *Mercury, Vapors, Light, Spectra (Visible and Ultraviolet), Intensity, Electric fields, Tests, Analysis, Semiconductors.

The photoconductivity was investigated of layers of amorphous selenium subjected to the action of mercury vapor, which simultaneously exhibit positive and negative photoconductivity. The investigations showed that the kinetics of photoconductivity of these layers depends substantially on the spectral composition of light, its intensity, and the direction of the applied electric field. Negative photoconductivity is observed under the effect of visible short-wave radiation of sufficient intensity. With an increase of the wavelength for a given light intensity the fall-off of positive photoconductivity under illumination decreases. (Author)

Kranz, J. and Drechsel, W.
OBSERVATION OF THE WEISS REGIONS IN POLYCRYSTALLINE MATERIALS BY INCREASED MAGNETO-OPTICAL KERR ROTATION. [1963] 11p. 4 refs.
Order from SLA $1.60 63-14690

Trans. of Zeitschrift für Physik (West Germany) 1958, v. 150, p. 632-639.

DESCRIPTORS: *Ferromagnetism, Crystals, *Domains (Crystallography), Visibility, *Magneto-optic effect, *Zinc compounds, Sulfides, Thin films, Vapor plating.

A ZnS layer of specified thickness is vaporized on a polished ferromagnetic specimen. The magneto-optical Kerr rotation of linearly polarized monochromatic light with meridional magnetization of the specimen is increased by multiple reflections in the layer and by interference effects to such an extent that photographic recording or visual observation of the Weiss regions becomes possible without difficulties during magnetization of the specimen. (Author)

Majer, Josef.
EFFECT OF MELTING CONDITIONS ON CRYSTALIZATION OF POLYPROPYLENE. [1963] 9p. (figs. tables omitted) 15 refs.
Order from SLA $1.10 63-14190

Trans. of Kunststoffe (West Germany) 1960, v. 50, no. 10, p. 565-567.

DESCRIPTORS: *Propenes, *Crystallization, Melting, Temperature, Nuclei.

The effect of melting conditions on the crystalization mechanism of polypropylene (Isotherm 140° C) was studied. On raising the melting temperature while retaining the duration of melting the remaining nuclei were removed from the melt in steps, as shown by the increasing value of the Avrami constant and also the specific volume of the "amorphous" phase. By simple extrapolation, the temperature necessary for reaching a completely "empty" melt at 140° C was determined at 235-240°. (Author)

Schwabe, Gerhard.
MEASUREMENT OF SMALL DIFFUSION DEPTHS IN SEMICONDUCTOR MATERIALS. [1963] 8p. (refs. omitted).
Order from SLA $1.10 63-16546

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1962 [v. 14] no. 5, p. 297-299.

DESCRIPTORS: *Semiconductors, Materials, Diffusion, *Crystals, Measurement, Solid State physics, Germanium.

The accuracy in the measurement of small diffusion depths in semiconductor materials can be appreciably heightened by a special grinding technique elaborated in detail. The method is simple and a few examples are given. Furthermore, it is shown that the necessary marking of the diffusion boundary can be applied also to n^+ -n junctions by means of a galvanic copper precipitate. (Author)

Stishov, S. M. and Belov, N. V.
CRYSTALLINE STRUCTURE OF THE NEW CLOSE-GRAINED MODIFICATION OF SILICA, SiO_2.
13 Feb 63 [8]p. 3 refs. FTD-TT-62-1709.
Order from OTS or SLA $1.10 63-19302

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 4, p. 951-954.

DESCRIPTORS: *Silicon compounds, *Dioxides, Powders, *Crystal structure, Determination.

Tkhoryk, Yu. O.
EMISSIVITY OF DIFFUSED p-n TRANSITION.
16 Apr 63 [9]p. 5 refs. FTD-TT-62-1834.
Order from OTS or SLA $1.10 63-19575

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1962, v. 7, no. 5, p. 476-481.

DESCRIPTORS: *Emissivity, *Semiconductors, Diffusion.

Wesolowski, J.
ON THE DIELECTRIC POLARIZATION OF LIQUID SELENIUM (Über die Dielektrische Polarisation Flüssigen Selens). [1963] [26]p. (foreign text included) 7 refs.
Order from SLA $2.60 63-14441

Trans. of [Polska Akademia Umiejetnosci, Krakow. Wydzial Matematyczno-Przyrodnoczy. Bulletin International, Series A: Sciences Mathematiques, 1938] p. 290-303.

DESCRIPTORS: *Selenium, Dielectric properties, Polarization, Liquids.

Theoretical Physics

DEVELOPMENTS IN HUNGARIAN PHYSICS: 4 June 63, 24p. 10 refs. JPRS: 19547.
Order from OTS $0.75 63-21976

Trans. of Fizikai Szemle (Hungary) 1963, v. 13, no. 3, p. 71-78, 95-96.

DESCRIPTORS: Gases, Quantum mechanics, Electron optics, *Conferences, *Physics, *Energy, Hungary.

Contents:
Optical pumping of gases, by Laszlo Csillag
International Conference on High Energy Physics, Tihany, 25-30 Sep 62.

Bogolyubov, N. and Sokolov, A.
STILL ANOTHER SECRET OF NATURE HAS BEEN UNCOVERED THEORY OF SUPERCONDUCTIVITY [AND] DISCOVERIES IN THE FIELD OF THEORETICAL PHYSICS. 28 Feb 63 [11]p. (illus. omitted). FTD-TT-62-1713.
Order from OTS or SLA $1.60 63-19170

Unedited rough draft trans. of Tekhnika Molodezhi (USSR) 1958, v. 26, no. 4, p. 5-7.

DESCRIPTORS: *Superconductivity, Theory, Physics, Electrons, Quantum statistics.

Weyl, A. R.
KNOWLEDGE AND POSSIBILITIES OF GRAVITY RESEARCH. [1963] [19]p. 20 refs.
Order from SLA $1.60 63-14486

Trans. of Weltraumfahrt (West Germany) 1958, v. 9, Dec, p. 100-106.

DESCRIPTORS: *Scientific research, *Gravity, Mass-energy relation, Field theory, Electromagnetic fields, Relativity theory, Quantum mechanics.

Einstein's unified-field theory establishes that gravitational fields are connected with electro-magnetic fields. From more general field theories with six or more dimensions, we can expect the existence of an "intermediate field", which is neither gravitational nor electrical. Such an intermediate field could be identified as the non-electrical nuclear binding forces. This assumption leads to the concept of a primary-matter ether of free gravitational energy, which is not in contradiction with Michelson-Morley's experiment. Certain properties of this ether, as for example opposite polarity, are in agreement with cosmological concepts with regard to gravitation and expansion of space. This also gives a better understanding of the cause of the mass in motion and of inertia. Consequences of these concepts permit us to assume that electromagnetic fields of still unobtained waves will create possibilities which are technically of great benefit. They may be of importance for aviation and space flight as well as for almost lossless production of energy from mass radiation. (Author)

Thermodynamics

Chiche, Pierre.
THERMODYNAMICS OF ADSORPTION, PT. I. [1963] 50p. 17 refs.
Order from SLA $4.60 63-14741

Trans. of Journal de Chimie Physique (France) 1962, v. 59, no. 4, p. 375-393.

DESCRIPTORS: *Adsorption, *Thermodynamics, Surface properties, Heat, Phase studies, Mathematical analysis.

The form taken by the fundamental equations of thermodynamics in the presence of adsorption phenomena is indicated, according to whether or not the properties of the layer adsorbed itself are to be revealed. The heats released by adsorption under different operating conditions are then studied, showing in each instance the role played by surface phenomena proper. (Author)

Chiche, Pierre.
THERMODYNAMICS OF ADSORPTION. PT. II. [1963] 48p. 20 refs.
Order from SLA $4.60 63-14742

Trans. of Journal de Chimie Physique (France) 1962, v. 59, no. 4, p. 394-411.

DESCRIPTORS: *Adsorption, *Thermodynamics, Surface properties, Heat, Mathematical analysis, Entropy, Monomolecular films.

Some typical patterns proposed for representing adsorp tion phenomena in mono- or multimolecular layer are studied, according to whether the molecules are mobile or fixed on the surface of the adsorbent. Methods of calculation from experimental data, fundamental quantities, heats and entropies, in particular, are then indicated. (Author) (See also 63-14741)

Minkov, P.
DATA ON THE THERMODYNAMIC PROPERTIES OF FREON 113 FROM 0-150° C. [1963] 6p.
Order from ATS $9.00 ATS-19Q68B

Trans. of Mashinostroene (Bulgaria) 1962, v. 11, no. 5, p. 19-21.

DESCRIPTORS: *Thermodynamics, Hydrocarbons, Fluorides, Temperature.

Os'minin, Yu. P.
THERMOPHYSICAL PROPERTIES OF MOLTEN-METALS (O Teploficheskikh Svoistvakh Rasplavlennykh Metallov). [1962] 8p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5454

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 2, p. 108-112.

DESCRIPTORS: *Liquid metals, *Sodium, *Potassium, *Mercury, *Bismuth, *Tin, High temperature research, Liquid metals, Melting, *Thermal conductivity, Heat transfer, Surface tension, Viscosity, Thermodynamics, Absorption.

Experimental data on heat conduction, temperature conduction, and heat capacity of sodium, potassium, mercury, bismuth, and tin was analyzed. Data on the surface tension of mercury, bismuth, and tin was compiled.

Sklyankin, A. A. and Strelkov, P. G.
ON THE REPRODUCIBILITY AND ACCURACY OF PRESENT-DAY NUMERICAL VALUES OF ENTROPY AND ENTHALPY OF CONDENSED PHASES AT STANDARD TEMPERATURES (O Vosproizvodimosti i Tochosti Sovremennykh Chislennykh Znachenii Entropii i Ental' pii Kondensirovannykh faz pri Standartnoi Temperature). 7 May 63 [31]p. 17 refs.
JPRS: R-3110-D; NBS-S-112711-63.
Order from OTS or SLA $3.60 63-19642

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 2, p. 100-111.

DESCRIPTORS: Thermodynamics, Liquids, *Calorimetry, *Entropy, *Enthalpy, Standards, Tables, *Benzoic acids, Heat of fusion.

The heat capacity of benzoic acid of known purity was measured for the range of 4 to 410°K. and its melting heat determined. Comparing the results obtained with those of the National Bureau of Standards of the United States, it was concluded that present-day methodology of calorimetric measurements makes it possible to obtain results that can be reproduced within 0.1 to 0.2% in the range of the International temperature scale. Between 90 and 20°K., the results obtained coincide to the same degree as above, except for some localized differences in the areas of 85, 70 and 24°K. A qualitative analogy was found to exist between these discrepancies and the known differences between temperature scales adopted in the USSR and the USA. However, the difference between the results of the present study and those of the NBS of the USA grows sharply below 20°K. and exceeds 5% at 12°K,, which, in part, is due to the insufficient accuracy with which the values obtained by the NBS are extrapolated in the direction of 0°K. The computed value of the entropy of benzoic acid at standard temperature coincides within 0.04% (i.e. 0.01_5 entropy units), while the enthalpy values coincide within 0.1% (5 cal. $mole^{-1}$). These values can be regarded as typical for the overall comparison of present-day data obtained with the aid of adiabatic calorimetry. (Author)

Zal'dovich, Ya.
THEORY OF IGNITION BY A HOT SURFACE (Teoriya Zazhiganiya Nakalennoi Poverkhnost'yu). [1962] [11]p. (foreign text included) 3 refs.
Order from OTS or SLA $1.60 63-10878

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1939, v. 9, no. 12, p. 1530-1534.

DESCRIPTORS: *Ignition, Gases, Surface temperature, *Autoignition, *Thermal conductivity, *Partial differential equations, Numerical analysis.

Zhukauskas, A. A., Makaryavichus, V. I., and Shlanchyauskas, A. A.
THE PROBLEM OF HEAT EMISSION OF SMOOTH PIPE BUNDLES IN CROSSFLOW LIQUIDS. 16 May 63 [15]p. AID rept. T-63-69. AD-404 728
Order from OTS or SLA $1.60 63-19444

Trans. of paper presented at the Conference on Heat and Mass [Transfer] held in Minsk [5-10 June] 61.

DESCRIPTORS: *Heat transfer, *Thermal conductivity, Pipes, Distribution, Liquids, *Calorimetry, Partial differential equations, Thermodynamics, Fluid flow.

The purpose of this work was to study the effect of pipe arrangement and type of liquid on heat emission of staggered and in-line bundles in relation to the direction of heat flow, amount of thermal pressure, temperature, and rate of liquid flow.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

CYBERNETICS AND CONTROL THEORY: 26 June 63, 13p. 18 refs. JPRS: 19867.
Order from OTS $0.50 63-31119

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 2, p. 284-291.

DESCRIPTORS: *Cybernetics, Control, Theory, *Games theory, *Control systems, Stability, Hysteresis.

Contents:
Examples of automaton games, by M. L. Tsetlin and V. Yu. Krylov
Frequency conditions for absolute stability of controllable systems with hysteresis non-linearities, by V. A. Yakubovich.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 123. 24 May 63, 46p. 27 refs. JPRS: 19394.
Order from OTS $1.25 63-21907

Trans. of [Orszagos Muszaki Konyvtar] Budapest. Muszaki Konyvtarosok Tajekoztatoja (Hungary) 1962 [v. 9] no. 4, p. 1-12; Avtomatyka (USSR) 1963 [v. 8] no. 1, p. 3-9, 90-93.

DESCRIPTORS: *Machine translation, *Data processing systems, *Documentation, *Cybernetics, Control systems, Probability, Adaptive control systems, Artificial intelligence.

Contents:
Developmental possibilities in scientific-technical information, by Ferenc Patek
The concept of self-organization, by K. O. Shkabara and S. C. Kozubovskyi: review of mono. An Approach to Cybernetics, London, 1961, by Gordon Pask
Conditions of absolute invariance and stability for learning systems with probability links, by O. H. Ivakhnenko.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 126. 14 June 63, 22p. JPRS: 19695.
Order from OTS $0.75 63-31045

Trans. of Wen Tzu Kai Ko (Chinese People's Republic) 1963, no. 2, p. 1-3 and Akademiya Nauk Kazakhskoi SSR. Vestnik, 1963 [v. 19] no. 2[215] p. 60-69.

DESCRIPTORS: *Machine translation, *Language, Data, Processing.

Contents:
Machine translation and language reform, by Liu Yung-ch'uan
Some new syntactic constructions in modern Kazakh, by S. Nurkhanov.

FUTURE TRENDS IN SOVIET SCIENCE AND TECHNOLOGY: REVIEW OF SOVIET AND SOVIET-BLOC LITERATURE. Rept. no. 3. 7 Feb 63 [286]p. AID rept. P-63-2; AD-299 103.
Order from OTS or SLA $18.00 63-19448

DESCRIPTORS: Satellites (Artifical), *Scientific research, Nuclear power plants, *Semiconductors, Transport planes, Cyberneties, Transportation, *Astrophysics, Metallurgy, *Space probes, *Conferences, Meteorites, Mars, Rocket planes, Radio astronomy, Research reactors, *Nuclear engineering, Radiochemistry, Radiation effects, Plutonium, Particle accelerator techniques, *Computers, Documentation, Scientific information centers, *Space biology, Medical research, Brain, Heart, Seismology, Maps, Glaciers, Rock (Geology), Earth, Mining engineering, Climatology, *Meteorology, Cold cathode tubes, Space communication systems, Transformers, Electron beams, *Welding, Steel, Zirconium, Explosive forming, Explosive actuators, Rolling mills, Tires, Superconductivity, *Synthetic rubber, Chemical engineering, Glass, Plastics, Solid state physics, Acoustics, Oceanology, Lasers, Masers, Neutrinos, Solar radiation, *Research program administration, *Education, Scientific organization.

Contents:
General information
Astrophysics and space sciences
Atomic energy
Automation and computers
Biology
Earth sciences and meteorology
Electronics and electricity
Metallic materials
Nonmetallic materials
Physics
Scientific administration, organization, and education.

NEWS OF THE ACADEMY OF SCIENCES USSR, TECHNICAL SCIENCES SECTION, TECHNICAL CYBERNETICS, 1963, NO. 1. 14 June 63, 320p. refs. JPRS: 19697.
Order from OTS $5.00 63-31046

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Tekhnicheskaya Kibernetika, 1963, no. 1, p. 1-208.

DESCRIPTORS: *Cybernetics, Automation, *Control systems, Programming (Computers), Linear programming, Linear systems, *Adaptive control systems, Synchronization (Electronics), Servomechanisms, Digital systems, Synthesis.

Contents:
Editorial note
Technological cybernetics and production control automation
On the application of the theory of statistical solutions to open and closed control systems, by A. A. Fel'dbaum
A method of solution for certain problems of nonlinear programming, by N. I. Andreev
On a certain problem in parametric linear programming, by E. E. Dudnikov
On the synthesis of optimal filtering systems, by A. A. Gorskii

The synthesis of optimal filters with many inputs and finite memory, by Ya. M. Tseitlin
The synthesis of multichannel discrete systems in the absence of random interference, by V. Ya. Katkovnik and others
A method of determining the optimal weight functions of discrete filters for one class of nonstationary random processes, by P. D. Krut'ko
Limitations on the location of the roots of the characteristic equation in the calculation of systems for minimum mean-square error, by A. M. Tsirlin
Estimating the precision of the mutual correlation function depending on the experimental recording time, by Ya. A. Gel'fandbein
On a property of optimal process structure, by F. B. Gul'ko
The study of extremal step-type hunting control systems in the presence of disturbances, by B. Yu. Mandrovskii-Sokolov
The approximate calculation of quick-response systems for the automatic optimization of parameters with harmonic sampling and search signals, by Yu. I. Alimov
A self-adjusting system with gradient search by the auxiliary operator method, by L. G. Evlanov
Quality criteria in self-adjusting systems, by V. A. Gordeev
Self-adjusting models, by L. M. Osovskii
Delay effects on the synchronization conditions of automatic phase regulating systems, by Yu. N. Bakaev
A combined system of program control of an inductive heating process, by M. B. Kolomeitseva
A method of stabilizing variable-structure automatic control systems without the use of error signal derivatives, by S. V. Yemel'yanov and V. A. Taran
The dynamics of quick-response relay servomechanisms with lags, by A. A. Pavlov
On level quantization in the synthesis of digital automatic systems, by S. M. Fedorov
On the equivalent structural representation of automatic systems, by A. P. Litvinov
On the affine recognition of plane figures, by V. A. Makhonin
The determination of the input signal of linear sampled-data system equivalent to the initial conditions, by P. D. Krut'ko
Review of L. T. Kuzin's book The calculation and design of discrete control systems, by V. V. Solodovnikov and K. A. P upkov
International Symposium on the Theory of Self-adjusting Automatic Control Systems [Rome, Apr 62] by B. Naumov.

Imberger, F.
PROMOTION OF RESEARCH IN WESTERN EUROPE (Forschungsförderung in Westeuropa). Sep 53, 13p. 1 ref.
Order from SLA $1.60 63-16638

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (West Germany) 1953, v. 95, no. 8 [p. 245-247]. Other translations are available from SLA as 58-891. and AL-321.

DESCRIPTORS: *Research program administration, Industrial research, Scientific research, Scientific organizations, *Economics, Europe.

Research activity finds different degrees of support in the various European countries. Prevailing conditions are examined in France, Italy, Denmark, Sweden, Norway, the Netherlands, Belgium and Great Britain, besides Germany. With respect to government support the West German Republic compares unfavorably with all others, for government grants amount to only 1/2 cent per year per capita, in contrast to 6 cents in England, 11 in Switzerland, 13 in Norway, 14 in Belgium and 18 in Sweden. (Author)

Inose, Hiroshi.
AN APPROXIMATE CALCULATION ON BLOCKING PROBABILITIES OF A TRIANGULAR ALTERNATE ROUTING SYSTEM. [1963] 16p. 2 refs.
Order from SLA $1.60 63-14740

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 10, p. 1450-1456.

DESCRIPTORS: Mathematical analysis, *Probability, *Telephone communication systems, Communication theory, Differential equations.

In a triangular alternate routing system, where offices A, B and C are disposed at vertexes of a triangle, blocking probabilities of calls on the A-B, B-C routes are derived under the assumption of "No Hole in the Multiple", the effect of this assumption on numerical results of probabilities is discussed and finally a method to correct the error due to this assumption is developed. Further, the method is applied to a system to which Wilkinson's method is also applicable and then the results of numerical calculations by both methods are compared and discussed. (Author)

Mel'chuk, I. A.
TWO OPERATORS FOR DETERMINING AGREEMENT (FOR AUTOMATIC SYNTACTIC ANALYSIS) tr. by Dolores V. Mohr. June 62 [54]p. 3 refs. Rand Memo. RM-3190-PR; AD-277 520.
Order from OTS or SLA $5.60 62-25647

Trans. of mono. [Dva Operatora Ustanovleniya Sootvetstviya; dlya Avtomaticheskogo Sintaksicheskogo Analiza] Moscow, 1961, 37p.
Another trans. is available from OTS or SLA $7.60 as 62-23997, JPRS-13444, 13 Apr 62 [73]p.

DESCRIPTORS: *Translations, *Social communication, *Language, Computer logic, Programming, *Machine translation, Vocabulary, Operators (Mathematics).

For abstract see Technical Translations 9: 110, 1963.

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Schardin, Hubert.
THE METHODS OF SPARK MOTION PICTURE PHOTOGRAPHY (Die Verfahren der Funkenkinematographie). [1963] [20]p. (foreign text included) 17 refs.
Order from SLA $1.60 63-14924

Trans. of German language article from unidentified source, n.d., p. 139-153.

DESCRIPTORS: *Spark shadowgraph photography, *Motion-picture photography, Electrical discharges, Capacitors, Illumination, *Sparks.

Zimmerman, Rudolph.
CONSIDERATIONS CONCERNING THE PRODUCTION OF ILLUMINATING SPARKS FOR HIGH FREQUENCY MOTION PICTURE PHOTOGRAPHY (Betrachtungen über die Erzeugung von Beleuchtungsfunken [für die Hochfrequenzkinematographie]). [1963] [22]p. (foreign text included) 1 ref.
Order from SLA $2.60 63-14925

Trans. of German language article from unidentified source, n.d., p. 153-168.

DESCRIPTORS: *Sparks, *Illumination, High frequency, *Spark shadowgraph photography, *Motion-picture photography, Production, Capacitors, Coils, Inductance.

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Order from SLA $1.10 63-14411

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DESCRIPTORS: *Cleaning compounds, Surface-active substances.

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JPRS: 19412.
Order from OTS $0.50 63-21919

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DESCRIPTORS: *Industrial production, *Economics, *Machine tool industry, Industrial plants, Machine tools, Technological intelligence, Labor, Food, Petroleum, Railroads.

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The role of public organizations in furthering production, by D. Lysenko.

Anisimov, G. D.
SCIENTIFIC AND TECHNICAL PROGRESS DURING THE BUILDING OF COMMUNISM. 31 May 63, 43p.
JPRS: 19507.
Order from OTS $1.25 63-21965

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DESCRIPTORS: *Research program administration, Electrical power production, Industrial plants, Automation, *Industrial production, Engineering personnel, Scientific research, Labor, *Communism, Propaganda.

Contents:
The unity of science and technology
The main directions of technological progress
Plants of the future
Means of accelerating scientific-technological progress
New techniques: for the welfare of mankind.

Shapiro, Nadia, comp.
MOTOR-TRANSPORT AND RELATED TERMS: RUSSIAN-ENGLISH GLOSSARY. 6 June 63, 77p.
JPRS: 19600.
Order from OTS $2.00 63-31007

DESCRIPTORS: *Dictionaries, *Transportation, Vehicles, USSR, Language, Transports.

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BR-CHICOM/6251
Yao Lin and others
THEORY OF ELECTRONIC COMPUTERS, VOL. I (Tien Tzu Shu Tzu Chi Suan Chi Yüan Li, Shang Ts'e) Peking, The Science Press, 1961. 330p. 8700 copies printed.

BR-CHICOM/6252
Mei Chen-yüeh
NUCLEAR PHYSICS (Yüan Tzu He Wu Hsüeh) Peking, K'o hsüeh ch'u pan she, 1961. 460p. 19,000 copies printed.

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THERMODYNAMIC PROPERTIES OF INDIVIDUAL SUBSTANCES; REFERENCE BOOK IN TWO VOLUMES. V. 1: CALCULATION OF THERMODYNAMIC PROPERTIES; V. 2: TABLES OF THERMODYNAMIC PROPERTIES (Termodinamicheskiye svoystva individual'nykh veshchestv; spravochnik v dvukh tomakh. tom 1: Vychisleniye termodinamicheskikh svoystv; tom 2: Tablitsy termodinamicheskikh svoystv). 2d ed., rev. and enl. Moscow, Izd-vo AN SSSR, 1962, 1161 and 916p. 4000 copies printed.

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Yevgrafov, Marat Andreyevich
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SEMICONDUCTOR MEASUREMENT AND CONTROL DEVICES FOR NUCLEAR POWER ENGINEERING (Poluprovodnikovyye izmeritel'nyye i upravlyayushchiye ustroystva dlya yadernoy energetiki) Moscow, Gosatomizdat, 1962. 200p. 7000 copies printed.

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Karyakin, Leonid Ivanovich
PETROGRAPHY OF REFRACTORY MATERIALS (Petrografiya ogneuporov) Khar'kov, Metallurgizdat, 1962. 314p. Errata slip inserted. 3050 copies printed.

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Pavlov, V. A.
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BR-SOV/6274
Leyzerzon, Mikhail Semenovich
SYNTHETIC MICA (Sinteticheskaya slyuda) Moscow, Gosenergoizdat, 1962, 191p. (Series: Polimery v elektroizolyatsionnoy tekhnike, vyp. 2). 6500 copies printed.

BR-SOV/6277
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PROCEEDINGS OF SYMPOSIUM ON BIOLOGICAL EFFECTS OF IONIZING RADIATION AT THE MOLECULAR LEVEL, BRNO, 2-6 JULY 1962 [SELECTED PAPERS]
Symposium on Biological Effects of Ionizing Radiation at the Molecular Level, Brno, 2-6 July 62. Proceedings, 1962, p. 37-59, 101-108, 149-160, 193-202, 221-225, 241-253, 343-357 (STI/PUB/60).

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For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 10, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.